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#include <Adafruit_Sensor.h>
#include <DHT.h>
#include <DHT_U.h>
#include <Wire.h>
#include <LiquidCrystal_I2C.h>

#define DHTPIN 2           // DHT11 sensor data pin
#define DHTTYPE DHT11      // DHT sensor type

#define MOTOR_PIN_ENA 9    // Enable pin for motor driver (PWM pin)
#define MOTOR_PIN_IN1 10   // Input pin 1 for motor driver
#define MOTOR_PIN_IN2 11   // Input pin 2 for motor driver

#define TEMPERATURE_THRESHOLD 25
#define TEMPERATURE_THRESHOLD1 29 // Temperature threshold to adjust motor
speed

DHT dht(DHTPIN, DHTTYPE);

LiquidCrystal_I2C lcd(0x27, 16, 2); // Adjust the I2C address if
necessary

void setup() {
    Serial.begin(9600);
    dht.begin();

    Wire.begin();
    lcd.init();
    lcd.backlight();
    lcd.begin(16, 2);
    lcd.setCursor(0, 0);
    lcd.print("Temperature:");
}

void loop() {
    delay(2000); // Delay between readings (adjust as needed)

    float temperature = dht.readTemperature(); // Read temperature in
Celsius
    if (isnan(temperature)) {

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    Serial.println("Failed to read temperature from DHT sensor!");
    return;
}

Serial.print("Temperature: ");
Serial.print(temperature);
Serial.println(" °C");

lcd.setCursor(0, 1); // Set cursor to the second line
lcd.print("                "); // Clear the previous motor speed

// Adjust motor speed based on temperature
if (temperature > TEMPERATURE_THRESHOLD1) {
    // Increase motor speed
    analogWrite(MOTOR_PIN_ENA, 255); // Set the motor speed to maximum
(255)
    digitalWrite(MOTOR_PIN_IN1, HIGH); // Set motor direction (forward)
    digitalWrite(MOTOR_PIN_IN2, LOW);
    lcd.setCursor(0, 1);
    lcd.print("Motor Speed: Max");
}
else if (temperature > TEMPERATURE_THRESHOLD) {
    // Increase motor speed
    analogWrite(MOTOR_PIN_ENA, 100); // Set the motor speed to a value
(150)
    digitalWrite(MOTOR_PIN_IN1, HIGH); // Set motor direction (forward)
    digitalWrite(MOTOR_PIN_IN2, LOW);
    lcd.setCursor(0, 1);
    lcd.print("Motor Speed: Med");
}
else {
    // Decrease motor speed
    analogWrite(MOTOR_PIN_ENA, 45); // Set the motor speed to a lower
value (150)
    digitalWrite(MOTOR_PIN_IN1, HIGH); // Set motor direction (forward)
    digitalWrite(MOTOR_PIN_IN2, LOW);
    lcd.setCursor(0, 1);
    lcd.print("Motor Speed: Low");
}
}

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    lcd.setCursor(12, 0); // Set cursor to the temperature position on the
first line
    lcd.print(temperature); // Print temperature
}
```