LM35 Temperature Meter – Arduino Uno

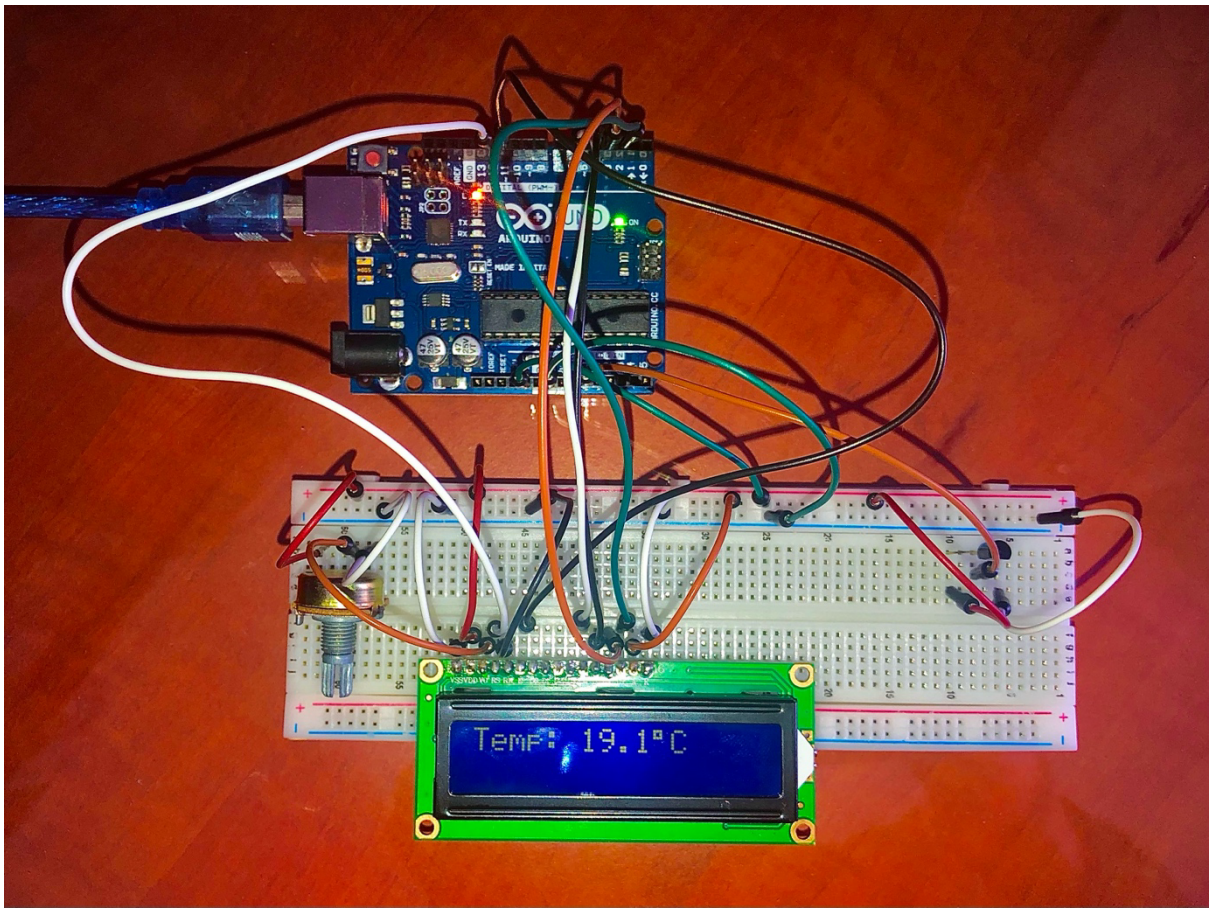


Image 1: *Project connectivity and result.*

This project uses an **LM35 analog temperature sensor** connected to an **Arduino Uno** to measure ambient temperature in real time. The temperature readings are displayed on a **16x2 LCD screen**.

The **LM35 sensor** outputs a voltage that is linearly proportional to the temperature in degrees Celsius (10 mV per °C). The Arduino reads this analog voltage through pin **A0**, calculates the temperature, and updates the LCD display every **500 milliseconds**.

The **LCD screen is connected directly to the Arduino** using digital pins (RS, EN, D4–D7), and shows the current temperature with one decimal precision, e.g., “Temp: 24.7°C”.

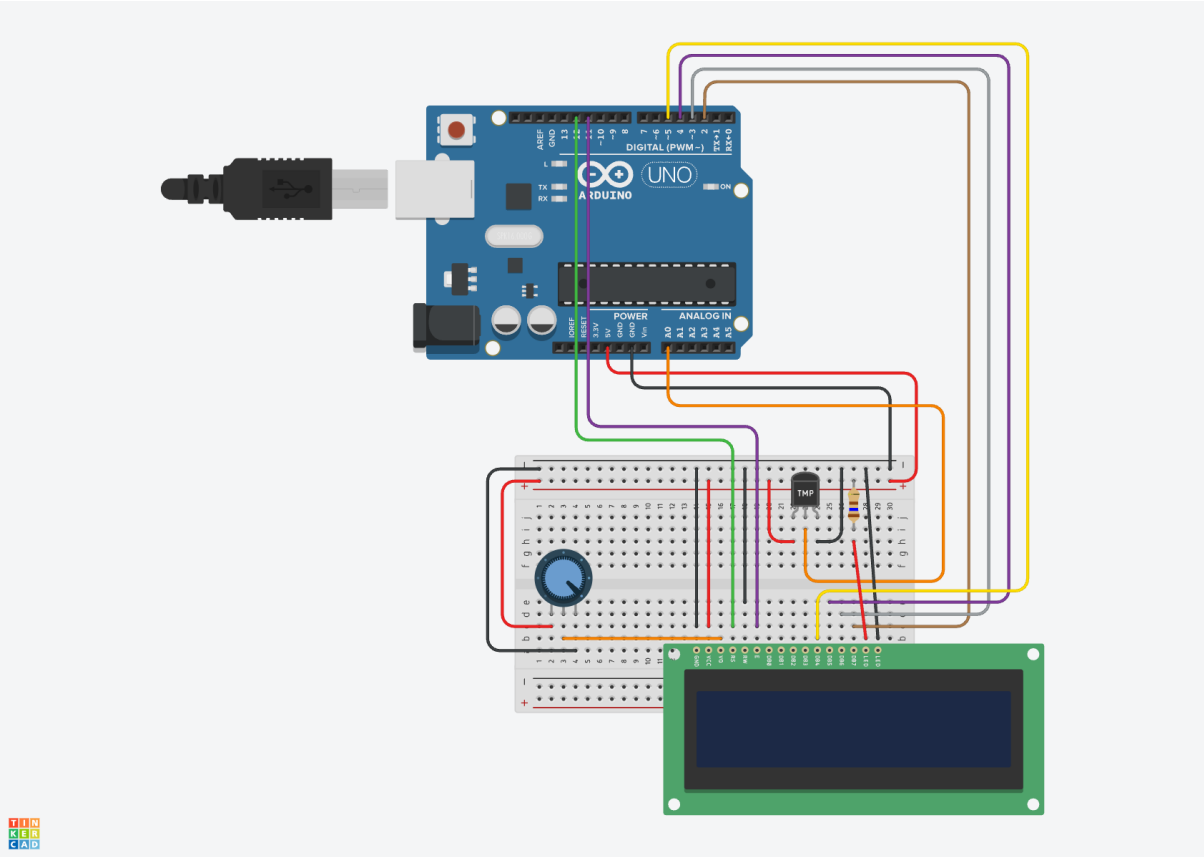
This project is a simple and effective way to monitor temperature using basic components and is ideal for beginners learning how to interface sensors and displays with Arduino.

Component List

Name	Quantity	Component
U1	1	Arduino Uno R3
U2	1	LCD 16 x 2
Rpot1	1	250 kΩ Potentiometer
U3	1	Temperature Sensor [TMP36]
R1	1	220 Ω Resistor

Connectivity

The connectivity that must be followed is presented in the image below.



Code

```
#include <LiquidCrystal.h>

const int rs = 12, en = 11, d4 = 5, d5 = 4, d6 = 3, d7 = 2;
LiquidCrystal lcd(rs, en, d4, d5, d6, d7);

const int lm35Pin = A0;

void setup() {
  lcd.begin(16, 2);
  lcd.print("Thermometer!");
  delay(2000);
  lcd.clear();
}

void loop() {
  int analogValue = analogRead(lm35Pin);
  float voltage = analogValue * (5.0 / 1023.0);
  float temperatureC = voltage * 100.0;

  lcd.setCursor(0, 0);
  lcd.print("Temp: ");
  lcd.print(temperatureC, 1);
  lcd.print((char)223);
  lcd.print("C");

  delay(500);
}
```