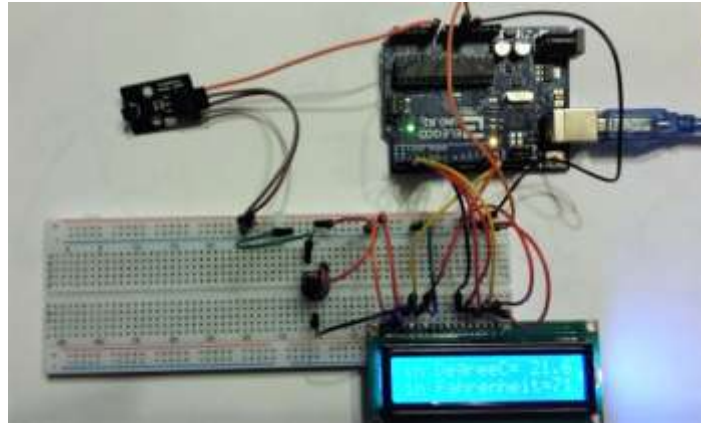


## Temperature Measurement and Display on LCD using LM35 Sensor and Arduino

### Components:

1. Arduino Board
2. LM35 Temperature Sensor
3. 16 X 2 LCD Display
4. 10k Potentiometer
5. Jumper Wires
6. Breadboard

### Setting Up:



### The LCD wiring:

1. LCD VSS pin to ground
2. LCD VDD pin to 5V
3. LCD VO pin (Third Pin) to Center Pin Potentiometer
4. LCD RS pin to digital pin 12
5. LCD R/W pin to ground
6. LCD Enable pin (E) to digital pin 11
7. LCD D4 pin to digital pin 5
8. LCD D5 pin to digital pin 4
9. LCD D6 pin to digital pin 3
10. LCD D7 pin to digital pin 2
11. LCD A pin to 5V
12. LCD K pin to GND

### 10K Resistor (Potentiometer) Wiring:

1. Outside Pins go to +5V and GND on the Breadboard
2. Center Pin to LCD **VO** pin (Third Pin)

## Temperature Sensor Wiring:

1. **Vcc** to 5V (+ve) on the Breadboard
2. **GND** to Ground (-ve) on the Breadboard
3. **Out** to A0 (Analog Pin 0) on the Arduino

## Code:

```
#include<LiquidCrystal.h>

LiquidCrystal lcd(12, 11, 5, 4, 3, 2);

const int sensor=A1; // Assigning Analog Pin A1 to variable 'sensor'

float tempc; //variable to store temperature in degree Celsius

float tempf; //variable to store temperature in Fahrenheit

float vout; //temporary variable to hold sensor reading

void setup()

{

pinMode(sensor,INPUT); // Configuring pin A1 as INPUT Pin

Serial.begin(9600);

lcd.begin(16,2);

  delay(500);

}

void loop()

{

vout=analogRead(sensor);

vout=(vout*500)/1023;

tempc=vout; // Storing value in degrees Celsius

tempf=(vout*1.8)+32; // Converting Temperature value from degrees Celsius to Fahrenheit

lcd.setCursor(0,0);

lcd.print("in DegreeC= ");

lcd.print(tempc);

lcd.setCursor(0,1);

lcd.print("in Fahrenheit=");

lcd.print(tempf);

delay(1000); //Delay of 1 second for ease of viewing in serial monitor

}
```