Digital Thermometer

Title: Digital Thermometer using Arduino and IC LM35.

Components:

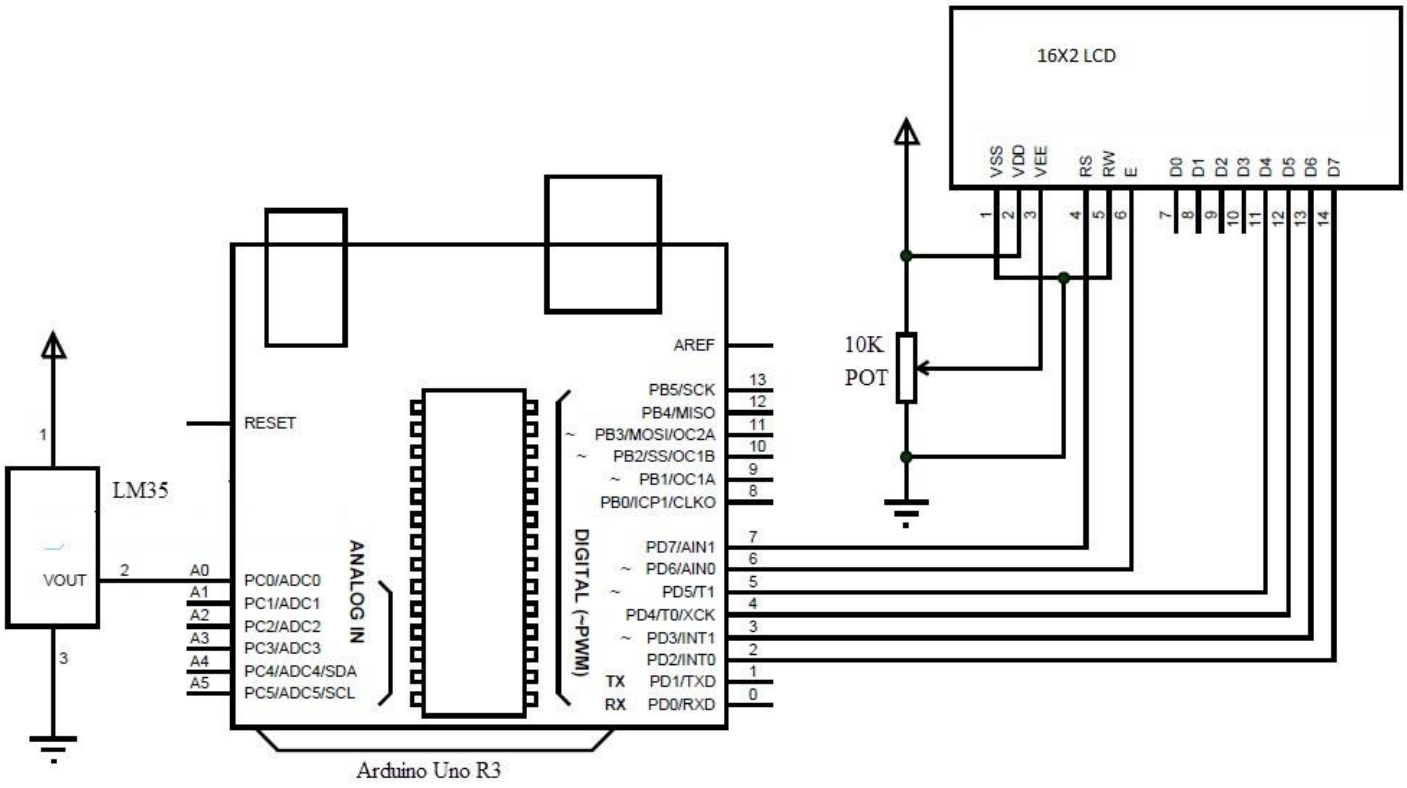
1. Arduino UNO	x1
2. 2.Temperature Sensor(LM35)	x1
3. LCD 16*2 Display	x1
4. Jumper Wires	x15
5. Bread Board	x1
6. Potentiometer (10K)	x1

Description:

The project is a temperature sensor made with an Arduino UNO and LM35 sensor and a few other components. The main aim of the project is to detect the temperature of the surroundings and display it on the LCD.

The working of the project starts with the LM35 sensor that senses the change in temperature of the surrounding, and uses that temperature difference to produce a voltage signal which is processed by the Arduino to give a digital output displaying the temperature of the given surrounding.

Circuit Diagram:



Analysis:

The connections to be made are given below:

- Connect LCD PIN 1 to Ground and PIN 2 to Supply respectively.
- Connect LCD PIN 3 to the 10K Potentiometer and connect rest of the terminals to the ground.
- Connect LCD PIN 15 to Ground and PIN 16 to Supply respectively.
- Connect LCD PINS D4,D5,D6 and D7 to PINS 5 - 2 of the Arduino.
- Connect LCD PIN 4(RS) to PIN 7 of the Arduino.
- Connect LCD PIN 5(RW) to Ground.

- Connect LCD PIN 6(E) to PIN 6 of the Arduino.
- Attach the LM35 to the Bread Board.
- Take the output of the LM35 i.e. PIN 2 of the LM35 and connect it to the Analog Input A0 of the Arduino.

Observation:

Celsius scale thermometer displays the ambient temperature through a LCD display. It consists of two
Sections . One is that which senses the temperature.
This is a temperature sensor LM 35. The other section
Converts the temperature value into a suitable number in Celsius scale.

Conclusion:

1. Measure temperature between -50 °C to 155 °C.
2. It can sense every .01°C temperature change and display it.
3. The unit (°C) can be replaced with °F that can use to measure viral fever.
4. It can response immediately after the temperature change.
5. It can also provide a digital input to a computer.

References:

https://create.arduino.cc/projecthub/arduino-based-digital-temperature-sensor

Snapshot: