DUCSTeach Workshop 02 - Temperature Test
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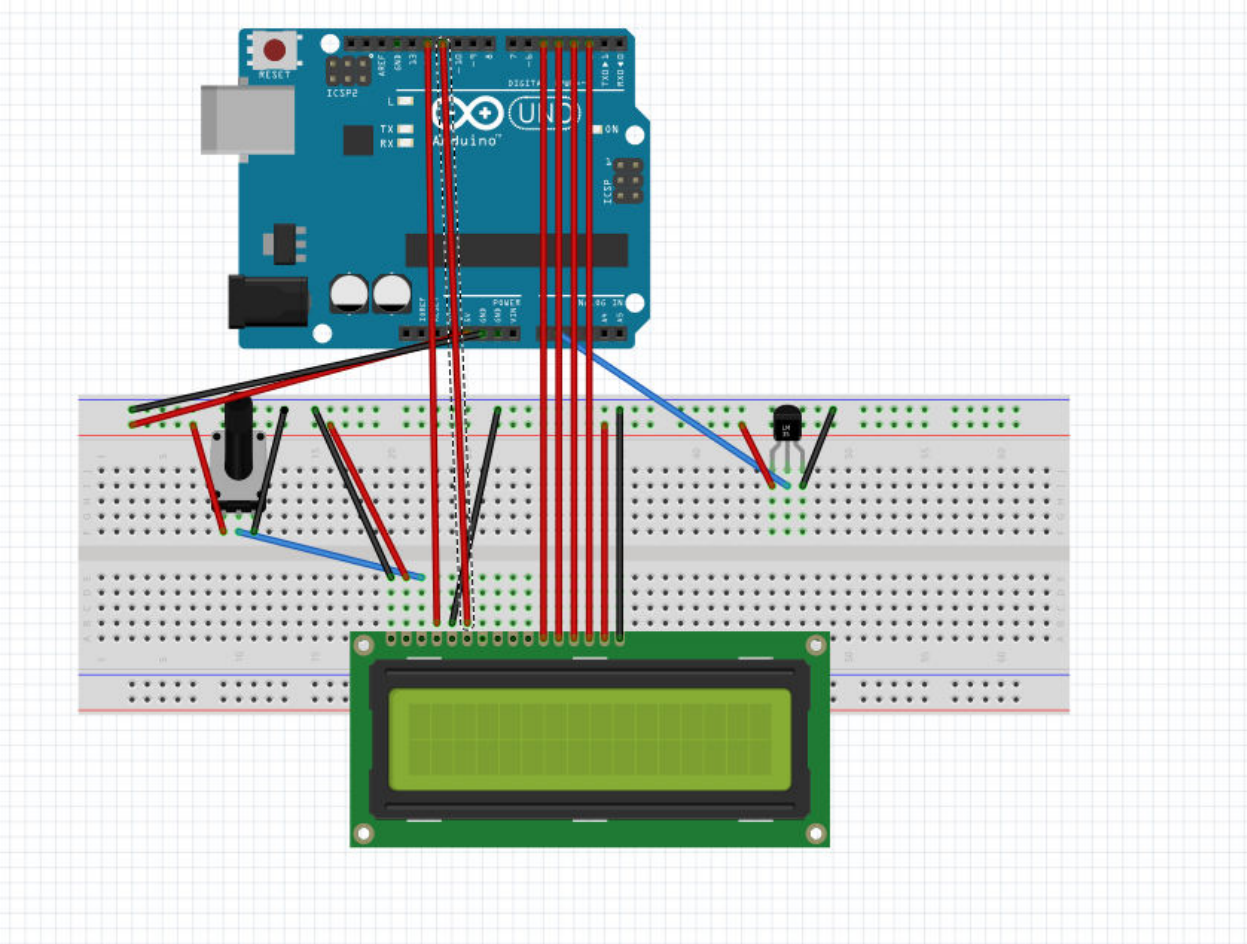
Time: 45 Minutes
People: 10 - 15 People
Materials:

- 5 Arduino Unos with 170 pin breadboard
- 5 16x2 LCD Displays
- Jumper Wires
- (Optional) 220 Ω Resistor (to demonstrate voltage resistance for higher advanced groups)
- USB Type B Cable
- Laptop with Arduino IDE installed
- Temp.ino file

Steps:

1. Insert the temperature sensor with the flat side facing you into A1, A2, A3.
2. Insert a wire into B1, with the other end into 5v
3. Insert a wire into B2, with the other end into Analog A1.
4. Insert a wire into B3, with the other end into GND.
5. LCD RS pin to digital pin 7
6. LCD Enable pin to digital pin 6
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 R/W pin to ground
12. LCD VSS pin to ground
13. LCD VCC pin to 5V
14. LCD V0 to 10k POT
15. LCD A to 5V
16. LCD K to ground

Circuit:



Code:

```
#include <LiquidCrystal.h>
LiquidCrystal lcd(7, 8, 9, 10, 11, 12); //Digital pins to which you connect the LCD
const int inPin = 1;                    // A0 is where you connect the sensor
void setup()
{
  lcd.begin(16,2);
}
void loop()
{
  int value = analogRead(inPin); // read the value from the sensor
  lcd.setCursor(0,1);
  float millivolts = (value / 1024.0) * 5000;
  float celsius = millivolts / 10;
  lcd.clear();
  lcd.setCursor(0,0);
  lcd.print(celsius);
  lcd.print("C");
  lcd.setCursor(0,1);
  lcd.print((celsius * 9)/5 + 32); //turning the celsius into fahrenheit
  lcd.print("F");
  delay(1000);
}
```