Circuit Connections

1. **LCD Display:**

   - **Pin 1** (Ground) of the LCD is connected to **GND** on the Arduino.

   - **Pin 2** (VCC) of the LCD is connected to **5V** on the Arduino.

   - **V0** of the LCD is connected to the **wiper contact** (2nd pin) of the **potentiometer**.

   - **Terminal 1** of the potentiometer is connected to **5V**.

   - **Terminal 2** of the potentiometer is connected to **GND**.

2. **LCD Control Pins:**

   - **RS** (Register Select) pin of the LCD is connected to **D12** of the Arduino.

   - **RW** (Read/Write) pin of the LCD is connected to **GND**.

   - **E** (Enable) pin of the LCD is connected to **D11** of the Arduino.

3. **LCD Data Pins:**

   - **DB4** of the LCD is connected to **D5** of the Arduino.

   - **DB5** of the LCD is connected to **D4** of the Arduino.

   - **DB6** of the LCD is connected to **D3** of the Arduino.

   - **DB7** of the LCD is connected to **D2** of the Arduino.

4. **Temperature Sensor (TMP36):**

    ○ **Power** pin of the **TMP36 temperature sensor** is connected to **5V** on the Arduino.

    ○ **Ground** pin of the TMP36 is connected to **GND** on the Arduino.

    ○ **Vout** of the TMP36 is connected to **A0** on the Arduino.

5. **LED (LCD Backlight):**

    ○ The **anode pin** of the LCD backlight is connected to a **220Ω resistor**, which is further connected to the **5V** power supply on the Arduino.

    ○ The **cathode pin** of the LCD backlight is connected to **GND**.

Working:

The **TMP36 temperature sensor** works like a diode, meaning its output voltage changes with temperature at a defined rate. The **Arduino** reads the voltage from the **TMP36** using the **A0 pin** and converts it into a temperature reading. The temperature value is then displayed on the **LCD screen** in **Fahrenheit**.

1. **Varying the Potentiometer:**
    The **potentiometer** allows you to adjust the contrast of the LCD display. You can vary it to set the appropriate value for clear visibility of the output.

2. **Simulating the Temperature:**
    Once the circuit is set up in **Tinkercad**, the **TMP36** sensor output can be adjusted to simulate different temperature values. The

Arduino will display these values on the LCD screen.