Building a Digital Voltmeter Using Arduino

A **Digital Voltmeter** measures the voltage applied to a circuit and displays the value on an **LCD screen** using an **Arduino**.

Components Needed:

- **Arduino Uno**
- **16x2 LCD display**
- **Voltage divider** (resistors for scaling down the voltage)
- **Breadboard** and **jumper wires**
- **Power supply** (e.g., 5V or appropriate voltage source)

Connections:

1. **LCD Setup:**
   Connect the LCD display to the Arduino using the **SDA** and **SCL** pins for communication, along with **VCC** and **GND** for power.

2. **Voltage Measurement:**

   - Connect the **input voltage** to a voltage divider circuit (using two resistors) to scale down the voltage to a measurable range.
   - The output of the voltage divider is connected to the **A0 analog pin** of the Arduino.

3. **Power Supply:**
   Power the Arduino using the **5V** pin or an external power supply that matches the Arduino's operating voltage.

Working:

Once the circuit is connected and the code is uploaded, the Arduino reads the voltage from the input via the voltage divider. It then converts the analog value to a digital format and displays the voltage reading on the **LCD screen**.