Project 5: Interfacing Temperature Sensor with Arduino using TinkerCAD

The components used in this project are:

1. Arduino Uno

- A microcontroller board based on the ATmega328P.
- Used to read the sensor data, process it, and display the temperature.
- Contains analog and digital pins for interfacing components.

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2. TMP36 Temperature Sensor

- An analog temperature sensor that outputs voltage proportional to the ambient temperature.
- Has three pins:
    - **VCC** – Power supply (2.7V to 5.5V)
    - **Vout** – Analog output connected to Arduino analog pin (e.g., A0)
    - **GND** – Ground
- Outputs 0.5V at 0°C, with a scale of 10mV per °C.

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3. Breadboard

- Used to make temporary circuit connections without soldering.
- Helps to organize and connect the sensor with Arduino.

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4. Jumper Wires

- Used to connect the TMP36 sensor to the Arduino through the breadboard.

Description :

To connect the **LM35 temperature sensor** to the **Arduino** using **jumper wires**, follow these simple steps:

1. **Power Connection**: Connect the **VCC pin** of the LM35 to the **5V pin** on the Arduino to provide the necessary operating voltage.
2. **Data Output**: Connect the **output pin** of the LM35 to the **A0 analog input pin** on the Arduino. This allows the Arduino to read the sensor's temperature data as an analog voltage.
3. **Ground Connection**: Connect the **GND pin** of the LM35 to one of the **GND pins** on the Arduino to complete the circuit and establish a common ground.