

Arduino Temperature Sensor Code Explanation

int tempPin = A0;

This line assigns analog pin A0 to the temperature sensor.

float temperature;

This variable stores the calculated temperature value in Celsius.

setup() Function

Serial.begin(9600); starts serial communication to display output in the Serial Monitor.

loop() Function

analogRead(tempPin); reads the sensor value (0 to 1023).

The voltage is calculated using the formula: $\text{voltage} = \text{sensorValue} \times (5.0 / 1023.0)$.

Temperature is calculated using: $(\text{voltage} - 0.5) \times 100$.

Serial Output

The temperature value is printed in Celsius every second.

delay(1000);

Adds a 1-second delay between readings.