TEMPERATURE READING USING ARDUINO UNO

```
#define ADC_VREF_mV 5000.0 // in millivolt
#define ADC_RESOLUTION 1024.0
#define PIN_LM35 A0

void setup()
{
  Serial.begin(9600);
}

void loop()
{
 // Get the ADC value from the temperature sensor
 int adcVal = analogRead(PIN_LM35);

 // Convert the ADC value to voltage in millivolts
 float milliVolt = adcVal * (ADC_VREF_mV / ADC_RESOLUTION);

 // Convert the voltage to the temperature in Celsius
 float tempC = milliVolt / 10;

 // Convert the Celsius to Fahrenheit
 float tempF = tempC * 9 / 5 + 32;

 // Print the temperature in the Serial Monitor
 Serial.print("Temperature: ");
 Serial.print(tempC); // Print the temperature in Celsius
 Serial.print("°C ~ "); // Separator between Celsius and Fahrenheit
 Serial.print(tempF); // Print the temperature in Fahrenheit
 Serial.println("°F");

 delay(1000); // Update sensor reading every second
}
```

sketch.ino ●   diagram.json

```
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2   #define ADC_RESOLUTION 1024.0
3   #define PIN_LM35 A0
4
5   void setup() {
6     Serial.begin(9600);
7   }
8
9   void loop() {
10    // Get the ADC value from the temperature sensor
11    int adcVal = analogRead(PIN_LM35);
12
13    // Convert the ADC value to voltage in millivolts
14    float millivolt = adcVal * (ADC_VREF_mV / ADC_RESOLUTION);
15
16    // Convert the voltage to the temperature in Celsius
17    float tempC = millivolt / 10;
18
19    // Convert the Celsius to Fahrenheit
20    float tempF = tempC * 9 / 5 + 32;
21
22    // Print the temperature in the Serial Monitor
23    Serial.print("Temperature: ");
24    Serial.print(tempC); // Print the temperature in Celsius
25    Serial.print("°C ~ "); // Separator between Celsius and Fahrenheit
26    Serial.print(tempF); // Print the temperature in Fahrenheit
27    Serial.println("°F");
28
29    delay(1000); // Update sensor reading every second
30  }
```

Simulation

00:05.812 100%

Temperature: 117.19°C ~ 242.94°F
Temperature: 153.32°C ~ 307.98°F
Temperature: 171.39°C ~ 340.50°F
Temperature: 202.64°C ~ 396.75°F
Temperature: 187.99°C ~ 370.38°F
Temperature: 182.13°C ~ 359.83°F