

## Experiment NO 7

Write the program read the temperature by sensor and the values to the serial monitor on the computer

CODE :-

```
const int tempPin = A0; // LM35 connected to analog pin A0

float temperatureC = 0;
float temperatureF = 0;

void setup()
{
  Serial.begin(9600); // Start serial communication
  Serial.println("Temperature Monitoring Started");
}

void loop()
{
  int analogValue = analogRead(tempPin); // Read analog value
  float voltage = analogValue * (5.0 / 1023.0); // Convert to voltage
  temperatureC = voltage * 100.0; // LM35: 10mV per °C
  temperatureF = (temperatureC * 9.0 / 5.0) + 32.0; // Convert to Fahrenheit

  // Display readings
  Serial.print("Celsius: ");
  Serial.print(temperatureC);
  Serial.print(" °C\tFahrenheit: ");
  Serial.print(temperatureF);
  Serial.println(" °F");
  delay(500); // Update every 0.5 seconds
}
```

OUTPUT:-



practical7.ino

1 //Write a program so it displays the temperature in Fahrenheit as well as the maximum and minimum temperatures it has seen.

2

3 const int tempPin = A0; // LM35 connected to analog pin A0

4

5 float temperatureC = 0;

6 float temperatureF = 0;

7

8 // Initialize max/min with extreme values

9 float maxTempF = -1000.0;

10 float minTempF = 1000.0;

11

12 void setup() {

13   Serial.begin(9600); // Start serial communication

14   Serial.println("Temperature Monitoring Started");

15 }

16

17 void loop() {

18   int analogValue = analogRead(tempPin); // Read analog value

19   float voltage = analogValue \* 5.0 / 1023.0; // Convert to voltage

20

Output Serial Monitor X

Message (Enter to send message to 'Arduino Uno on COM5')

14:19:59.885 -> Temperature Monitoring Started

14:19:59.867 -> Celsius: 31.77 °C   Fahrenheit: 89.18 °F

14:20:00.405 -> Celsius: 33.24 °C   Fahrenheit: 91.82 °F

14:20:00.902 -> Celsius: 33.24 °C   Fahrenheit: 91.82 °F

14:20:01.406 -> Celsius: 33.24 °C   Fahrenheit: 91.82 °F

14:20:01.912 -> Celsius: 33.24 °C   Fahrenheit: 91.82 °F

14:20:02.395 -> Celsius: 33.24 °C   Fahrenheit: 91.82 °F

14:20:02.915 -> Celsius: 33.72 °C   Fahrenheit: 92.70 °F

...

Ln 43, Col 1   Arduino Uno on COM5   2:28 PM   27°C Mostly cloudy   9/10/2025