#### **CODE EXPLANATION**

#### Variables and Constants:

## 1. const int analogIn = A0;

- This line defines a constant integer 'analogIn' and assigns it the value 'A0'. This means 'analogIn' will refer to the analog pin A0 on the Arduino.

### 2. int humiditysensorOutput = 0;

- This line initializes an integer variable 'humiditysensorOutput' to store the humidity sensor's output value.

#### int RawValue=0;

- This line initializes an integer variable 'RawValue' to store the raw analog reading from the temperature sensor.

### 4. double Voltage = 0;

- This line initializes a double variable 'voltage' to store the voltage value calculated from the raw analog reading.

# 5. double tempC = 0;

- This line initializes a double variable 'tempC' to store the temperature in Celsius.

### 6. double tempF = 0;

- This line initializes a double variable 'tempF' to store the temperature in Fahrenheit.

**Setup Function**: The setup() function runs once when the Arduino is powered on.

#### 1. Serial.begin(9600);

- Initializes the serial communication at a baud rate of 9600 bps. This allows the Arduino to communicate with the computer.

# 2. pinMode(A1, INPUT);

 Sets the A1 pin as an input pin. This pin will be used to read the humidity sensor output.

#### **Loop Function:**

# RawValue = analogRead(analogin);

- Reads the analog value from the temperature sensor connected to 'A0' and stores it in 'RawValue'.

## 2. Voltage = (RawValue / 1023.0) \* 5000;

- Converts the raw analog value to a voltage value in millivolts. The '1023.0' is the maximum value for a 10-bit ADC, and '5000' represents 5V in millivolts.

# 3. tempC = (Voltage - 500) \* 0.1;

- Converts the voltage to a temperature in Celsius. The formula assumes the sensor output is offset by 500 mV and each 10 mV represents 1°C.

## 4. tempC = (tempC \* 1.8) + 32;

- Converts the temperature from Celsius to Fahrenheit.