TEMPERATURE AND HUMIDITY MONITORING SYSTEM

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AIM:

To measure the temperature and humidity by using temperature sensor with the interface of Arduino.

SOFTWARE REQUIRED:

➔ Tinkercad

HARDWARE REQUIRED:

➔ Potentiometer
➔ Temperature Sensor
➔ Breadboard
➔ Arduino
➔ Personal Computer

THEORY:

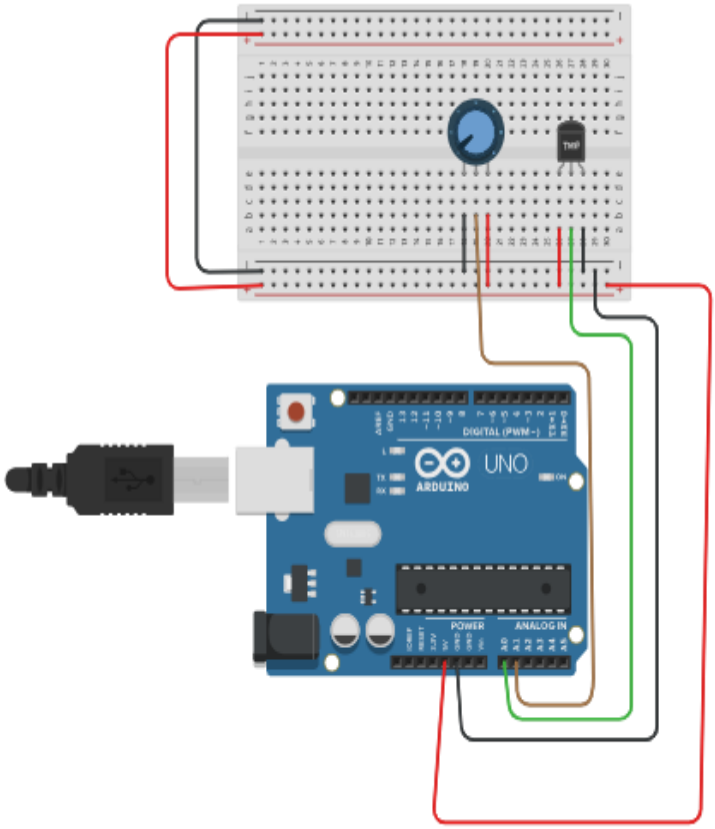
➔ **Potentiometer**:
- A variable resistor that can adjusted to provide different resistance values. It is commonly used to control electrical devices such as volume controls on audio equipment.

➔ **Temperature Sensor**:
- A device that measures temperature and converts it into a signal that can be read by an instrument. Examples include thermistors, and thermocouples.

CIRCUIT CONNECTION:

1. The Arduino 5Voltage supply is connected to the breadboard and one end of potentiometer and temperature sensor are connected to parallel and other end of potentiometer and temperature sensor are connected to the ground.
2. The middle pin of potentiometer is connected to the A1 of Arduino.
3. In potentiometer is taken input from A1 pin of Arduino.
4. Similarly the middle pin of temperature sensor is connected to the A0 of Arduino.

CIRCUIT DIAGRAM:



PROGRAM:

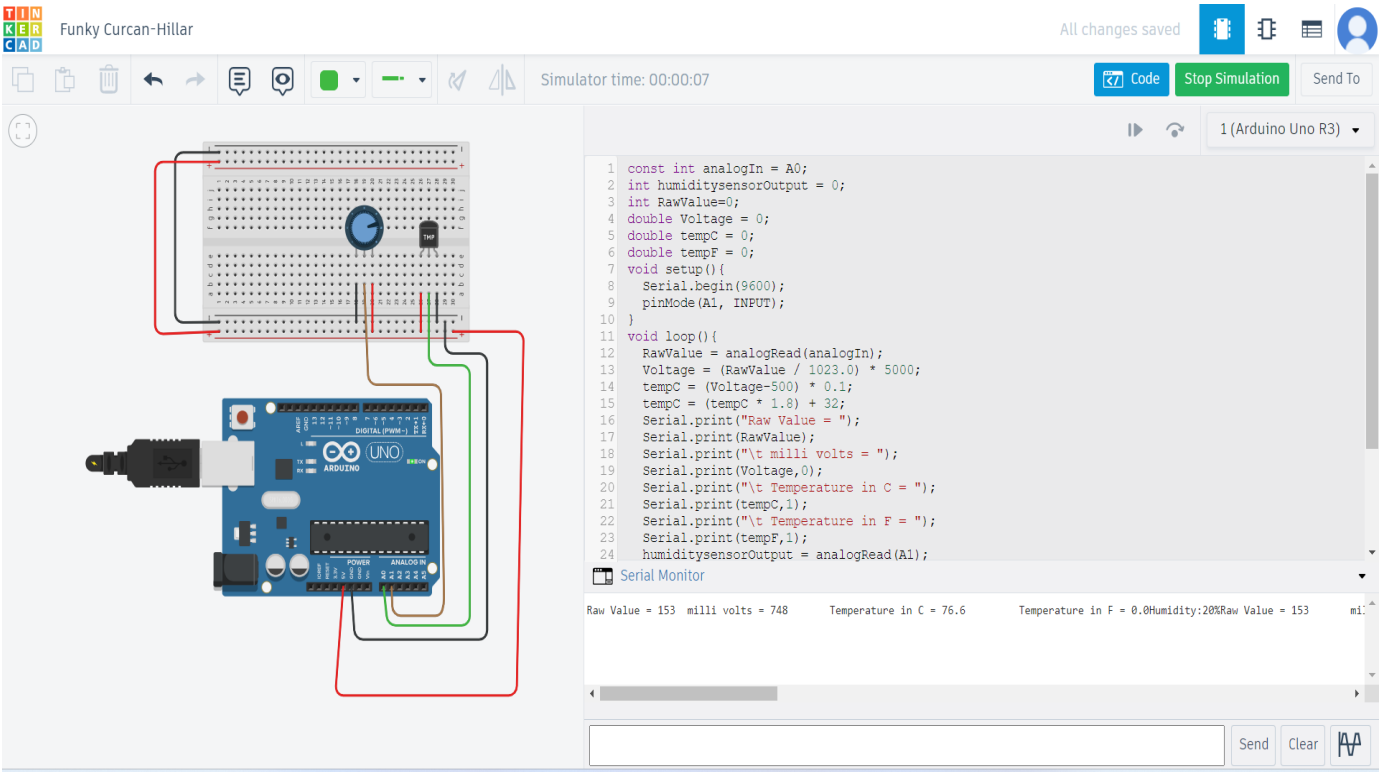
```
const int analogIn = A0;
int humiditysensorOutput = 0;
int RawValue=0;
double Voltage = 0;
double tempC = 0;
double tempF = 0;
void setup(){
  Serial.begin(9600);
  pinMode(A1, INPUT);
}
void loop(){
  RawValue = analogRead(analogIn);
  Voltage = (RawValue / 1023.0) * 5000;
  tempC = (Voltage-500) * 0.1;
  tempC = (tempC * 1.8) + 32;
  Serial.print("Raw Value = ");
  Serial.print(RawValue);
```

```
  Serial.print("\t milli volts = ");
  Serial.print(Voltage,0);
  Serial.print("\t Temperature in C = ");
  Serial.print(tempC,1);
  Serial.print("\t Temperature in F = ");
  Serial.print(tempF,1);
  humiditysensorOutput = analogRead(A1);
  Serial.print("Humidity:");
  Serial.print(humiditysensorOutput);
  Serial.print("%");
  delay(5000);
}
```

PRECAUTIONS:

1. Check the compilation errors.
2. Connect the circuit properly to particular Arduino pins.

OUTPUT:



RESULT:

Hence I run the code successfully and observed the output values on Serial Monitor.