



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Experiment 2.2

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Branch: BE-CSE

Section/Group: IOT_627-B

Semester: 05

Date of Performance: 13/09/24

Subject Name: IOT

Subject Code: 22CSP-329

1. Aim:

To Investigate real-time relationship between humidity and temperature in IoT.

2. Objective:

1. Learn about interfacing.
2. Learn about IoT programming.

3. Hardware Required:

1. Arduino Uno R3
2. DH11 Temperature and Humidity Sensor
3. Male to Female Jumper Wire
4. Software: Arduino IDE

4. Procedure:

1. Gather parts: Microcontroller, DTH-11 sensor, breadboard, wires.
2. Connect DT-11 sensor pins to the respective ground, VCC and DATA pin for wire communication.
3. Transfer the program to the microcontroller.
4. Run the simulation to see the output on the Serial Monitor. Make sure the connections and code are correct.

5. Code:

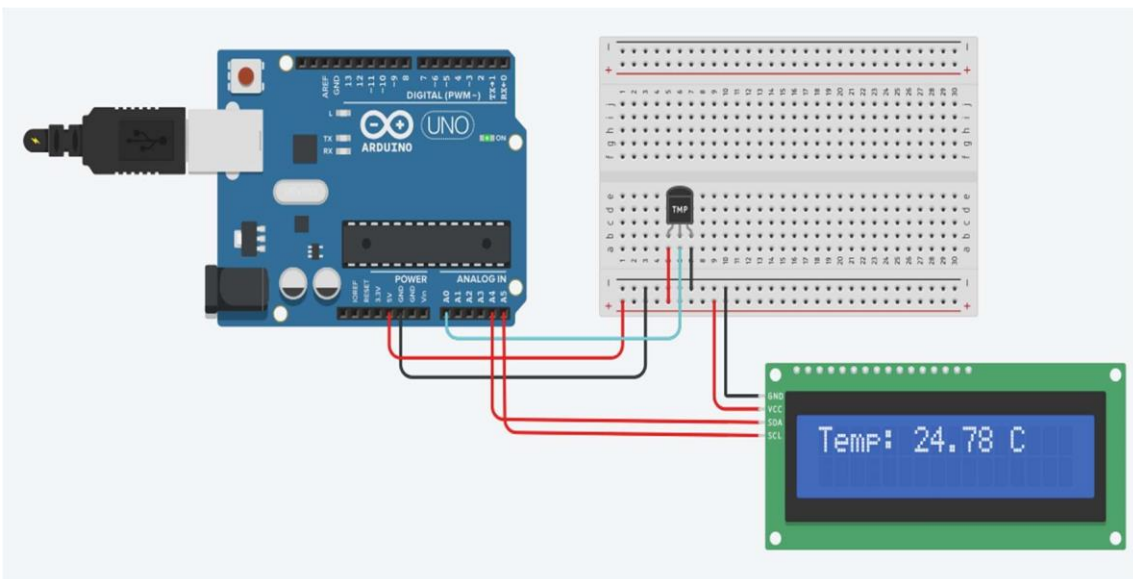
```
#include <Adafruit_Sensor.h>
#include <DHT.h>
#include <DHT_U.h>
#define DHTTYPE DHT11 // DHT 11
#define DHTPIN 2 DHT_Unified dht(8, DHTTYPE);
uint32_t delayMS;

void setup() {
```

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```
Serial.begin(9600);  
dht.begin();  
sensor_t sensor;  
delayMS = sensor.min_delay / 1000;  
}  
void loop()  
{  
  sensors_event_t event;  
  dht.temperature().getEvent(&event);  
  Serial.print(F("Temperature: "));  
  Serial.print(event.temperature);  
  Serial.println(F("°C"));  
  dht.humidity().getEvent(&event);  
  Serial.print(F("Humidity: "));  
  Serial.print(event.relative_humidity);  
  Serial.println(F("%"));  
  delay(1000);  
}
```

6.Output:





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7. Learning Outcomes:

1. Accurately read and calibrate the TMP36 sensor for temperature measurement.
 2. Interface and control an I2C LCD display to show real-time data.
 3. Understand analog signal reading and conversion using Arduino.
 4. Implement and configure threshold values for sensor outputs.
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