Experiment-2.2

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Aim: To measure the temperature and humidity using an DHT-11 sensor.

Objectives:

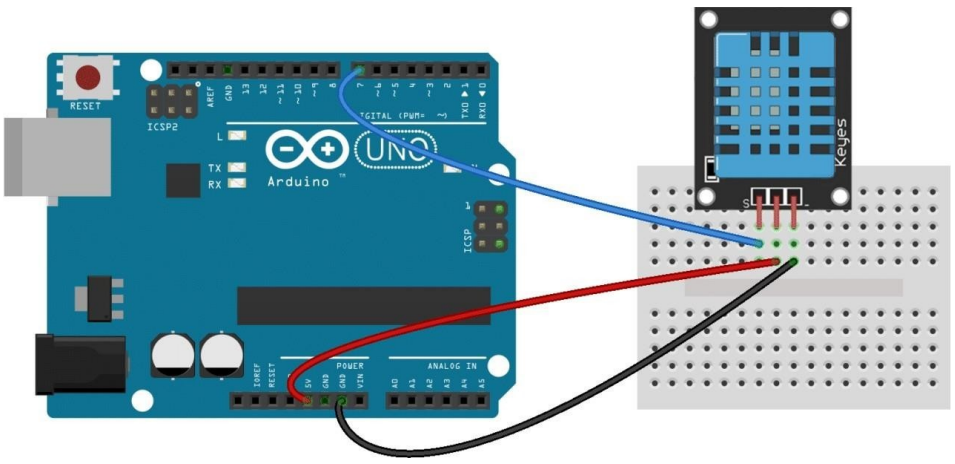
1. Learn how to make connections with Arduino board .

2. Learn using DHT-11 with arduino.

Components Required:

Arduino Uno board, DHT-11 Sensor, Jumper wires, Arduino IDE , Buzzer

Circuit Diagram:



Script & Output:

1. (a)Code in Arduino IDE -

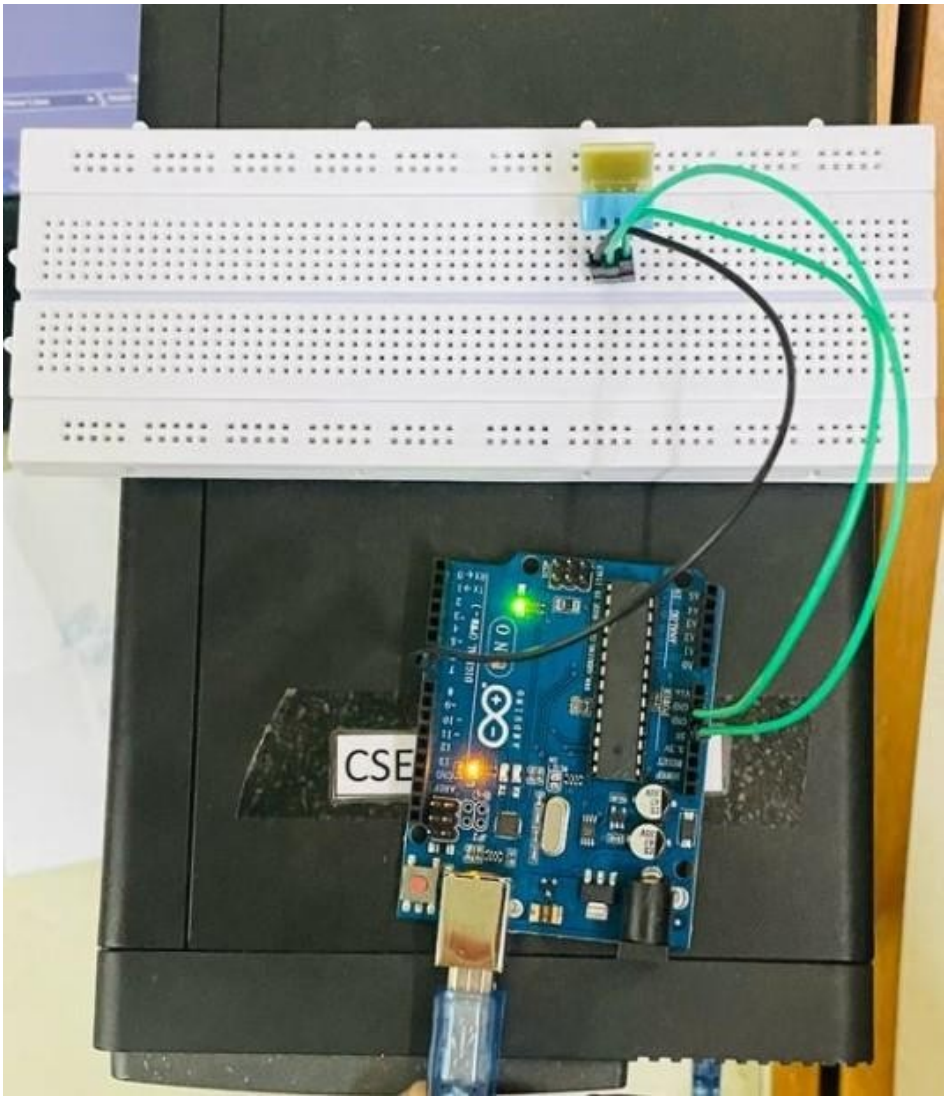
```
#include <dht.h>
dht DHT;

#define DHT11_PIN 7

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

void loop(){
int chk = DHT.read11(DHT11_PIN);
Serial.print("Temperature = ");
Serial.println(DHT.temperature);
Serial.print("Humidity = ");
Serial.println(DHT.humidity);
delay(1000);
}
```

(b) Simulation-



2. (a) Code in Arduino IDE (for Analysis) -

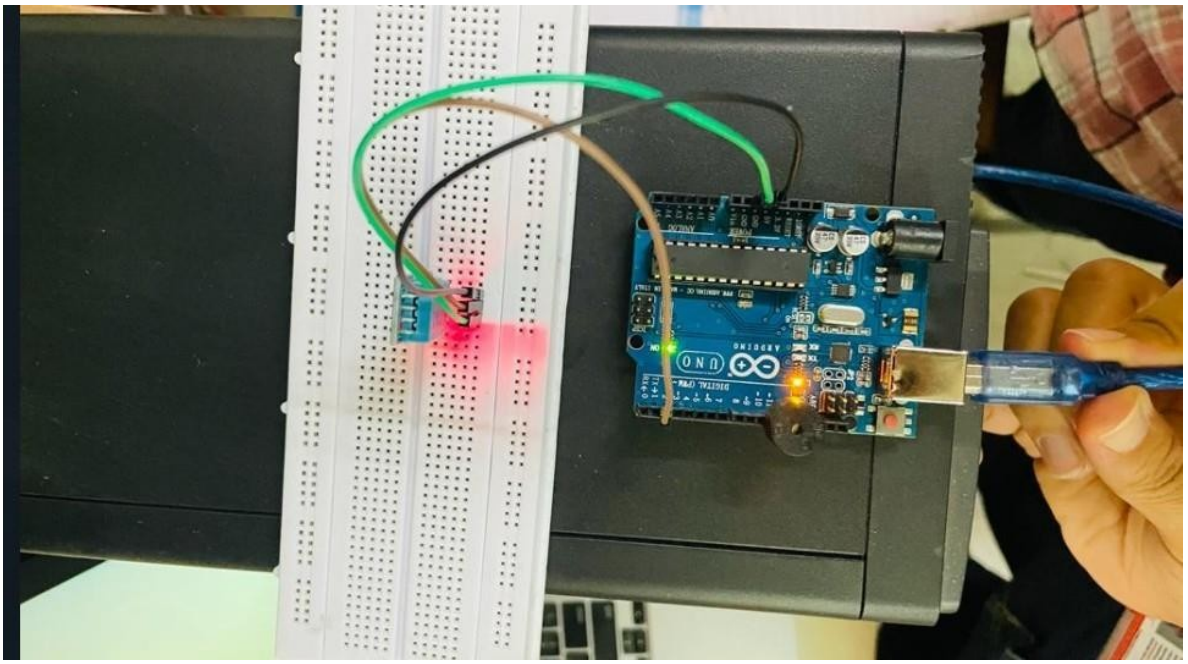
```
#include <dht.h>

dht DHT;


#define DHT11_PIN 2
```

```
void setup()
{
  pinMode(11, OUTPUT);
  Serial.begin(9600);
  delay(100);
}
void loop()
{
  int sensorValue = DHT.read11(DHT11_PIN);
  Serial.println("Temp : ");
  Serial.println(DHT.temperature);
  delay(100);
  if(DHT.temperature>20)
  {
   digitalWrite(11, HIGH);
    delay(1000);
  }
  else
  {
   digitalWrite(11, LOW);
    delay(1000);
  }
}
```

(b) Simulation-



Result:

```
Humidity = 30.00
Temperature = 28.00
Humidity = 30.00
Temperature = 28.00
Humidity = 30.00
Temperature = 28.00
Humidity = 30.00
Temperature = 28.00
Humidity = 30.00
Temperature = 28.00
Humidity = 30.00
Temperature = 28.00
Humidity = 30.00
Temperature = 28.00
Humidity = 30.00
Temperature = 28.00
Humidity = 30.00
Temperature = 28.00
Humidity = 30.00
```

Conclusion:

1. We see our sensor respond.
2. We learned to use buzzer to perform analysis of our sensor.
3. We learned to make the connections with Arduino Board.