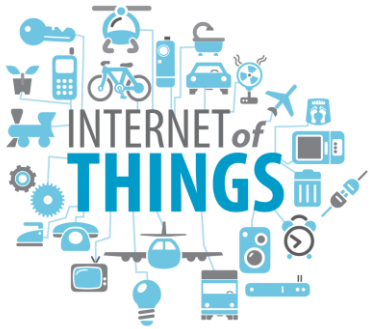
UNIVERSITY OF SCIENCE - VNUHCM
Faculty of Information Technology

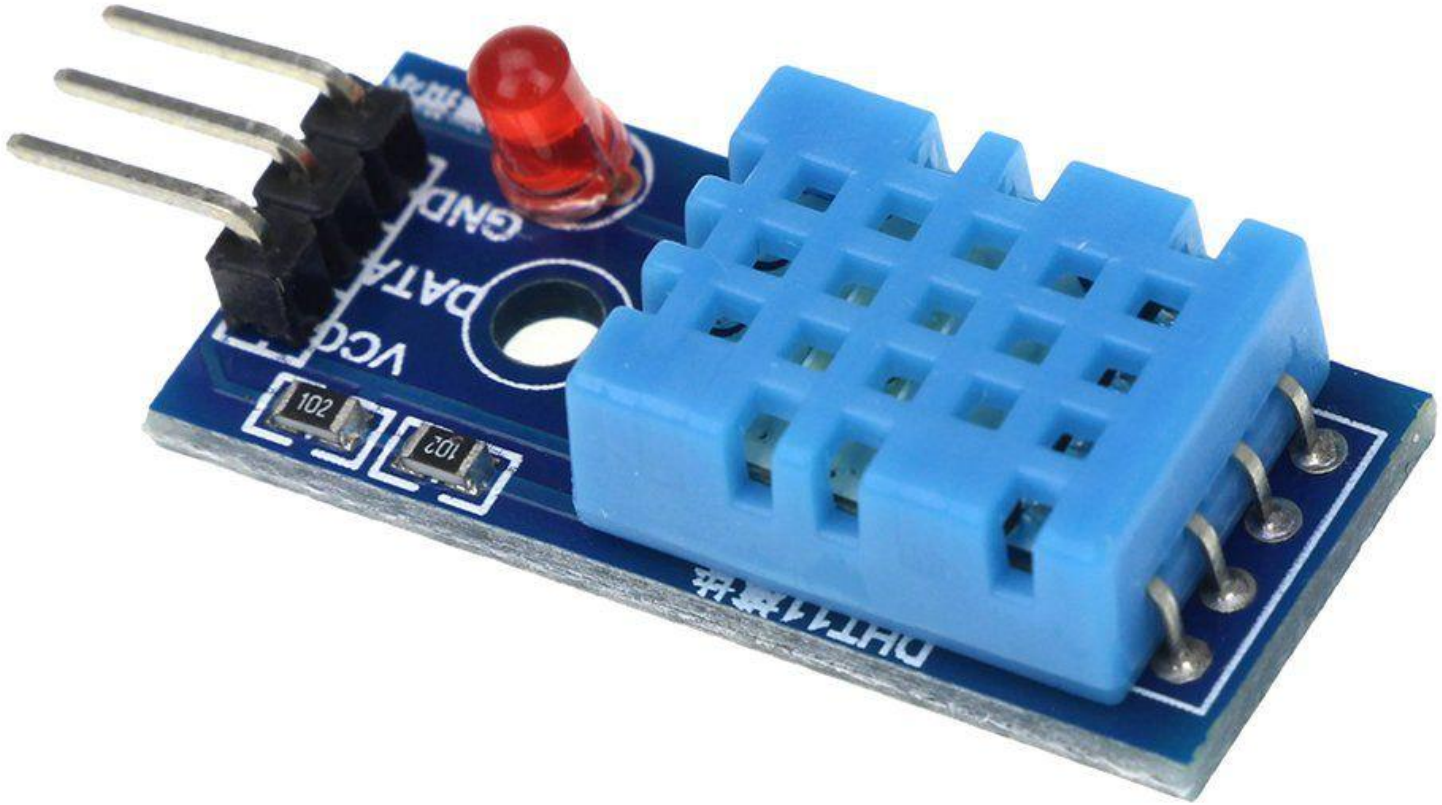
INTERNET OF THINGS

1.9

TEMPERATURE & HUMIDITY SENSOR

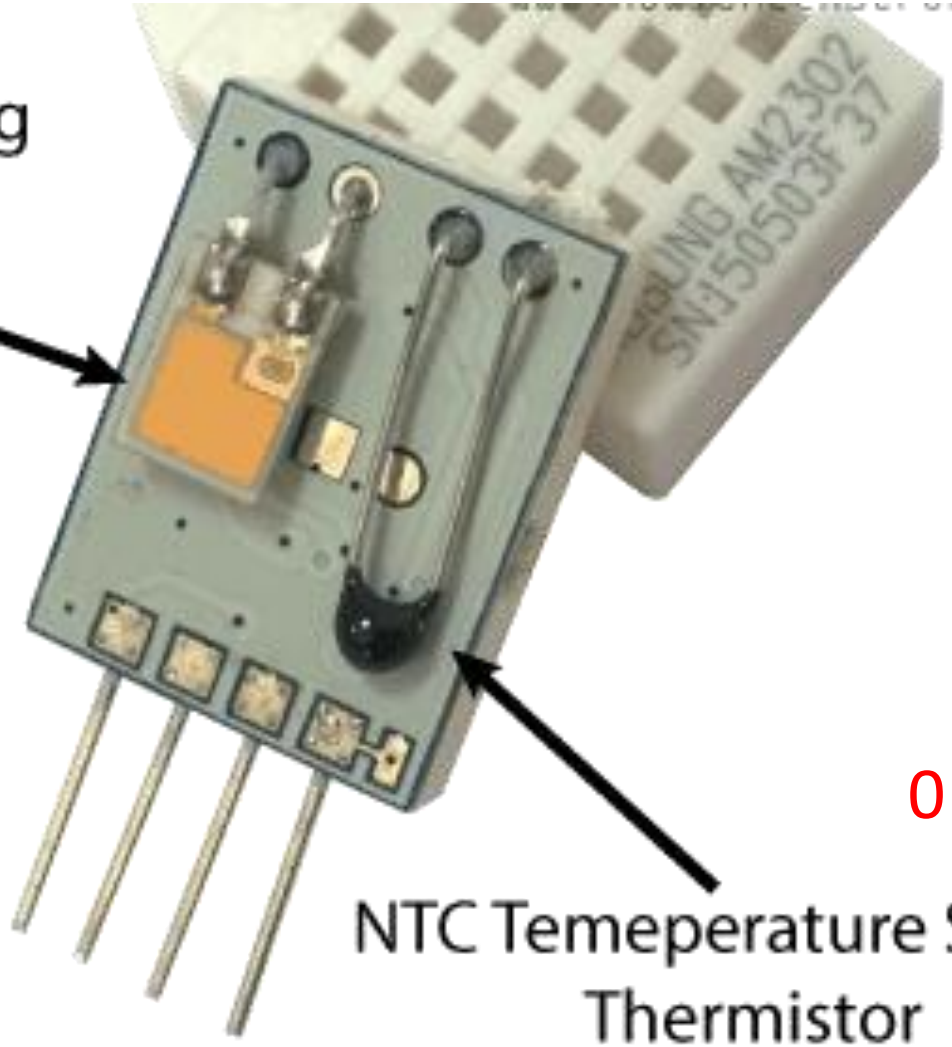


Temperature & Humidity Sensor DHT11



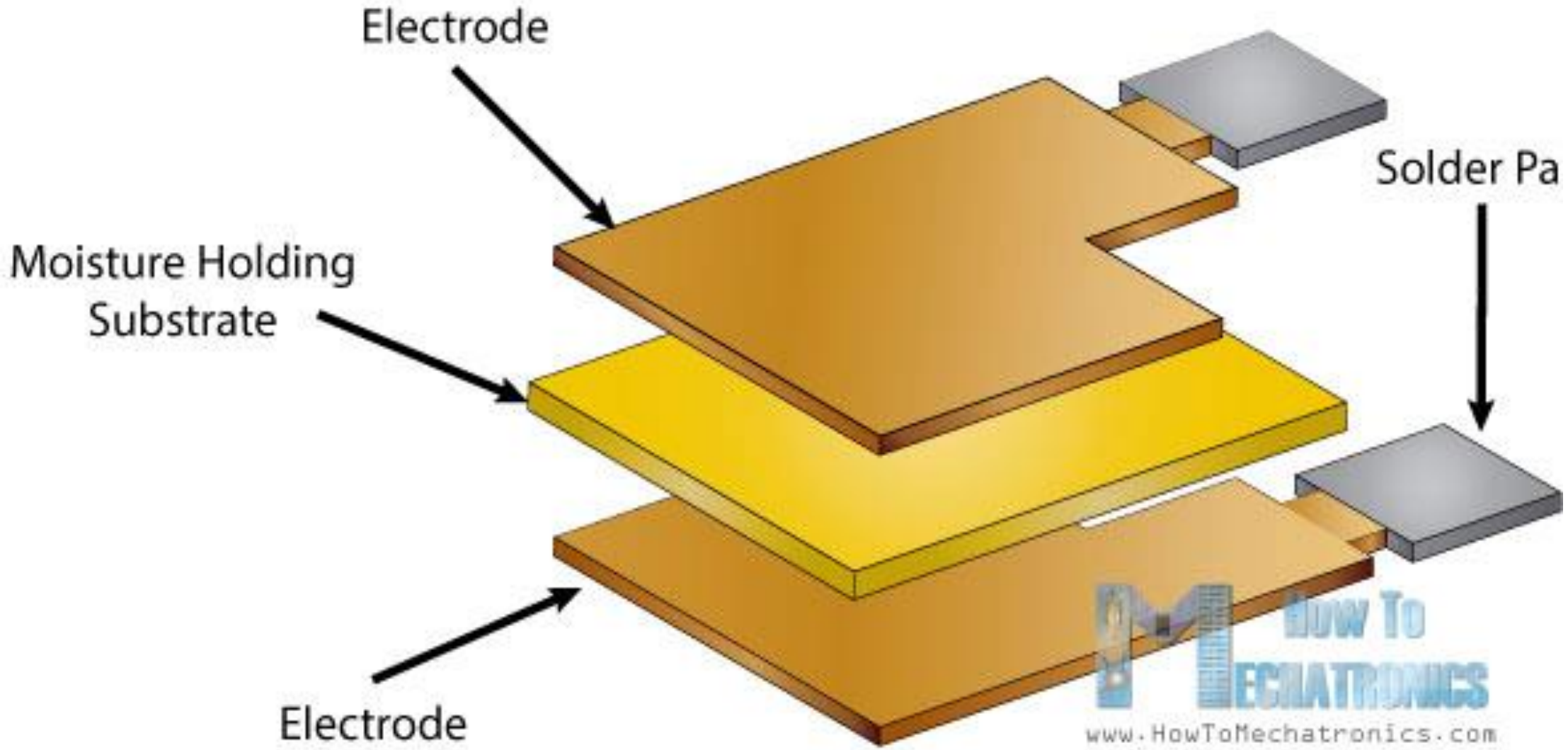
Humidity Sensing Component

20 – 80% ± 5%



0 – 50°C ± 2°C

NTC Temeperature Sensor Thermistor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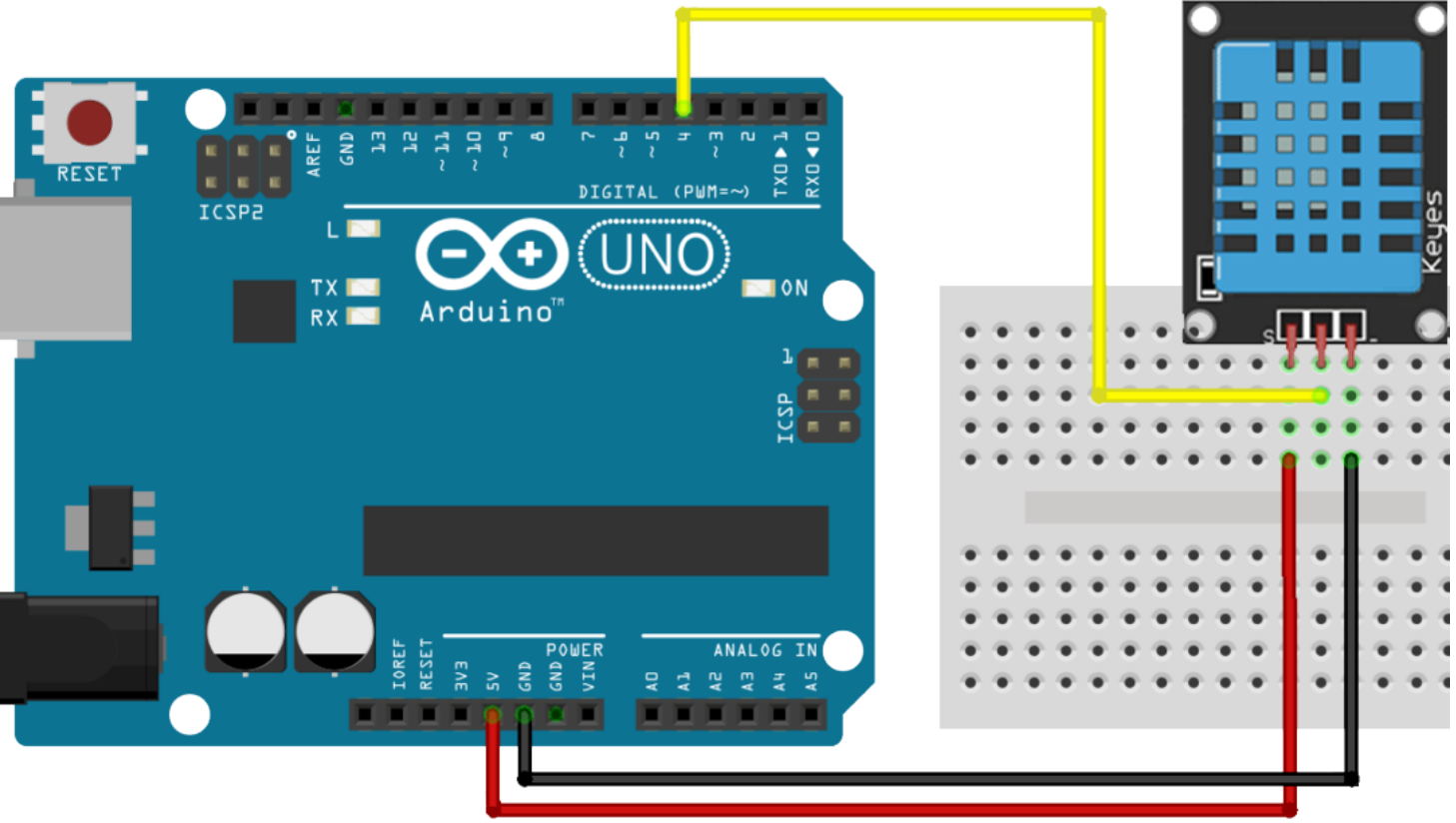
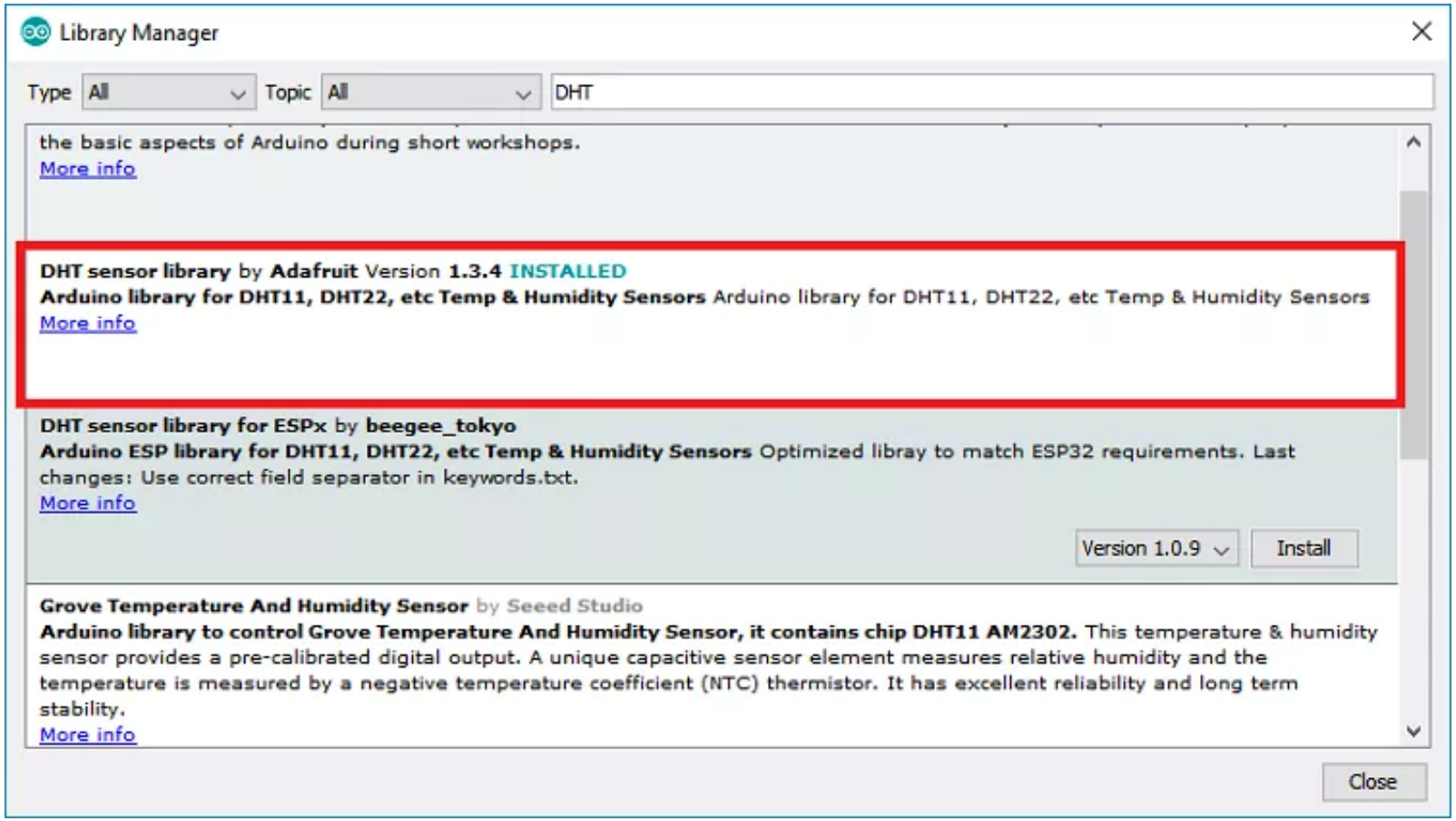


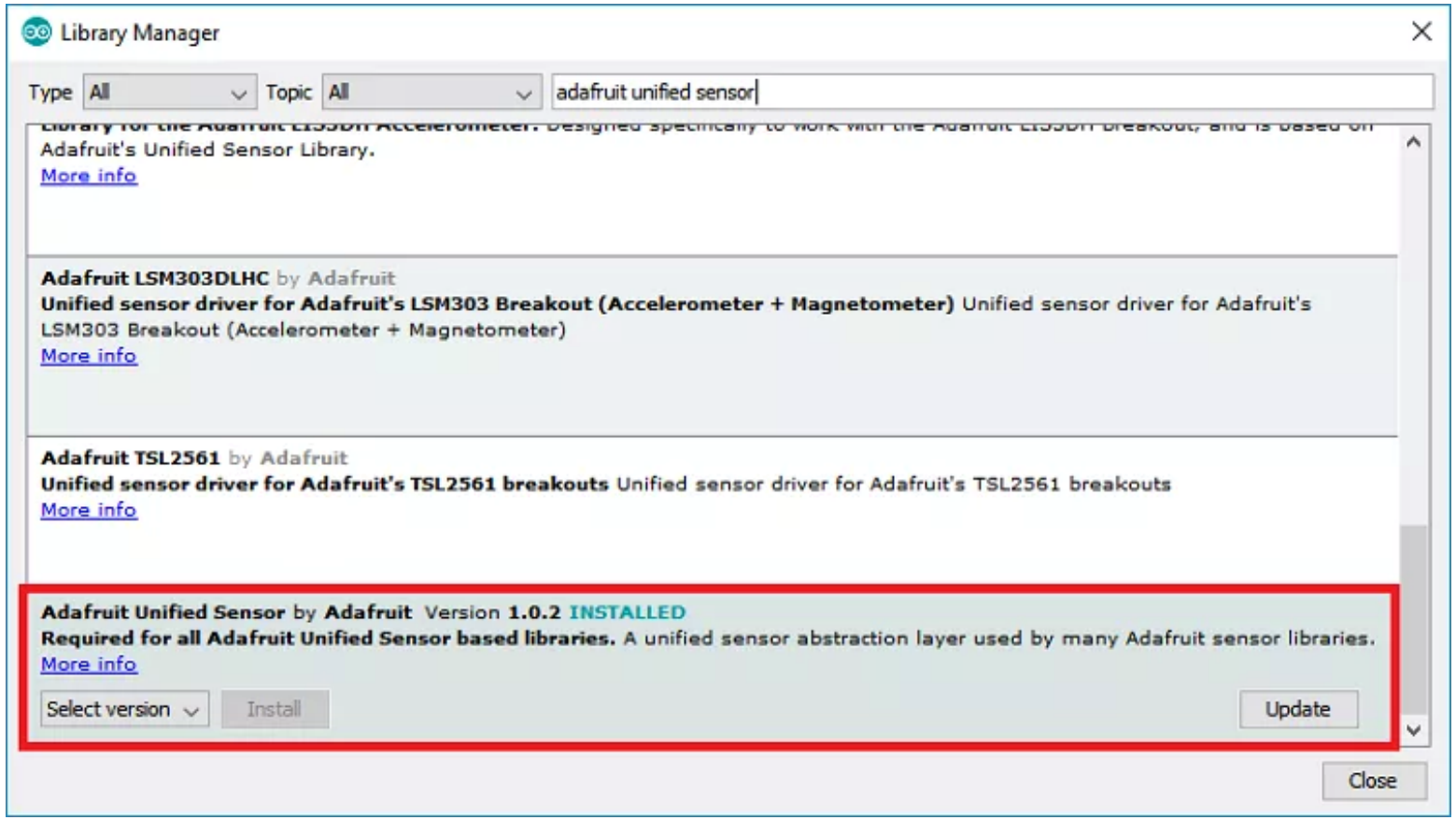
DHT11	Arduino
VCC	5v
GND	GND
DATA	4



Install DHT11 sensor library

- Open Arduino IDE and go to **Sketch > Include Library > Manage Libraries**

- Search for "**DHT**" on the search box and install DHT library from Adafruit



Install DHT11 sensor library

- After installing DHT11 library from Adafruit, type "**Adafruit Unified Sensor**" in search box

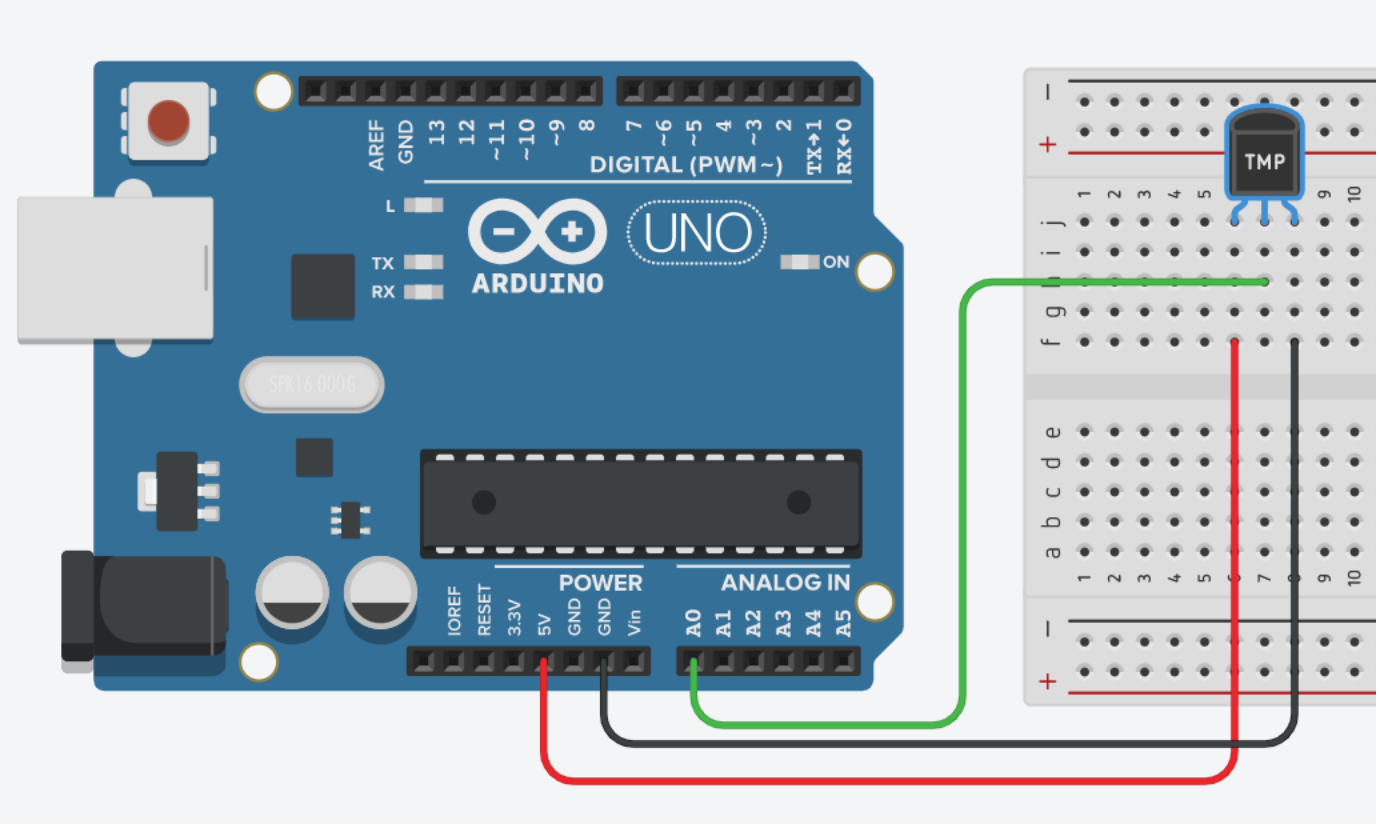
```ino
#include "DHT.h"
int dht_pin = 4;
DHT dht(dht_pin, DHT11);

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

void loop() {
  float h = dht.readHumidity();
  float t = dht.readTemperature();      // Read temperature as Celsius
  float f = dht.readTemperature(true);  // Read temperature as Fahrenheit

  Serial.print("Humidity: ");
  Serial.println(h);
  Serial.print("Temperature (C): ");
  Serial.println(t);
  Serial.print("Temperature (F): ");
  Serial.println(f);

  delay(1000);
}
```



0.01 V = 10mV = 1°C

Output:
-50°C -> 125°C

celsius =((analog_value * 5 / 1023) /0.01) - 50

TMP	Arduino
Power	5v
GND	GND
VOUT	A0

```
void setup()
{
  pinMode(A0, INPUT);
  Serial.begin(9600);
}

void loop()
{
  float value = analogRead(A0);
  float celsius = (value * 5 / 1023) / 0.01 - 50;
  Serial.println(celsius);
}
```

Practice