# Project 1 :

## DHT11 Temperature & Humidity sensor

# 1. INTRODUCTION: -

The DHT11 is chosen because it is lab calibrated, accurate and stable and its signal output is digital. Most important of all, it is relatively inexpensive for the given performance. Below is the pinout of the sensor.

# COMPONENTS:-

1. **DHT 11**
2. **WEMOS**

# APPLICATION:-

This sensor is used in various applications such as measuring humidity and temperature values in heating, ventilation and air conditioning systems.

Weather stations also use these sensors to predict weather conditions. The humidity sensor is used as a preventive measure in homes where people are affected by humidity.
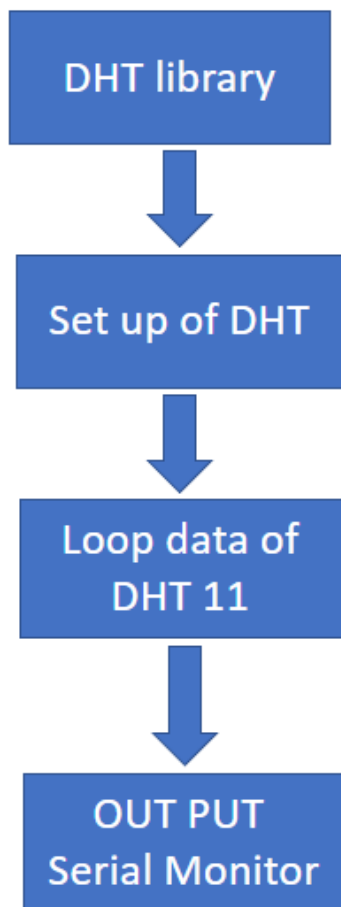
**Offices, cars, museums, greenhouses and industries use this sensor for measuring humidity values and as a safety measure.**

# OBJECTIVES: -

The DHT11 is a basic, ultra-low-cost digital temperature and humidity sensor.

It uses a capacitive humidity sensor and a thermistor to measure the surrounding air and spits out a digital signal on the data pin (no analog input pins needed). It's fairly simple to use but requires careful timing to grab data.

# FLOW CHART:-

```
┌─────────────────┐
│   DHT library   │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│   Set up of DHT │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│  Loop data of   │
│     DHT 11      │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│    OUT PUT      │
│  Serial Monitor │
└─────────────────┘
```

# PROGRAMMING:-

```
#define BLYNK_PRINT Serial
#include <ESP8266WiFi.h>
#include <BlynkSimpleEsp8266.h>
#include "DHT.h"
#include <SimpleTimer.h>
#define DHTTYPE DHT11
#define dht_dpin D4
DHT dht(dht_dpin, DHTTYPE);
SimpleTimer timer;
char auth[] = "Your Auth Code";
char ssid[] = "Your WiFI";
char pass[] = "Your Wifi Password";
float t;
float h;
 void setup()
{
    Serial.begin(9600);
    Blynk.begin(auth, ssid, pass);
    dht.begin();
    timer.setInterval(2000, sendUptime);
}

void loop()
{
  Blynk.run();
  timer.run();
}
 void sendUptime()
{
  float h = dht.readHumidity();
  float t = dht.readTemperature();
  Serial.println("Humidity and temperature\n\n");
  Serial.print("Current humidity = ");
  Serial.print(h);
  Serial.print("%  ");
  Serial.print("temperature = ");
  Serial.print(t);
  Blynk.virtualWrite(V0, t);
  Blynk.virtualWrite(V1, h);
}
```

**HARDWARE CONNECTION :-**

1. Connect DHT 11 pin to D4.

2. Connect DHT 11 pin GND to GND.

3. Connect DHT 11 pin 5V TO 5V.

# CURCUIT DIAGRAM :-