

SERVERLESS IOT DATA PROCESSING

```
#include <ESP8266WiFi.h>
```

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

```
char ssid[] = "your_SSID";
```

```
char pass[] = "your_PASSWORD";
```

```
#define DHTPIN D1
```

```
#define DHTTYPE DHT11
```

```
DHT dht(DHTPIN, DHTTYPE);
```

```
void setup() {
```

```
  Serial.begin(115200);
```

```
  WiFi.begin(ssid, pass);
```

```
  while (WiFi.status() != WL_CONNECTED) {
```

```
    delay(1000);
```

```
    Serial.println("Connecting to WiFi...");
```

```
  }
```

```
Serial.println("WiFi connected");  
pinMode(D2,OUTPUT); // BULB  
pinMode(D3,OUTPUT); // FAN  
pinMode(D6,OUTPUT); // KITCHEN  
pinMode(D7,OUTPUT); // AC  
pinMode(D4,OUTPUT); // TV --R
```

```
digitalWrite(D2,LOW);  
digitalWrite(D3,LOW);  
digitalWrite(D6,LOW);  
digitalWrite(D7,LOW);  
digitalWrite(D4,LOW);  
dht.begin();  
}
```

```
void loop() {  
  float h = dht.readHumidity();  
  float t = dht.readTemperature();  
  
  if (isnan(h) || isnan(t)) {  
    Serial.println("Failed to read from DHT sensor!");  
  } else {  
    Serial.print("Humidity: ");  
    Serial.print(h);  
    Serial.print(" %\t Temperature: ");  
    Serial.print(t);  
    Serial.println(" *C");  
  
    if (t > 25.0) {  
      digitalWrite(D2, HIGH); // Turn on the bulb  
    } else {  
      digitalWrite(D2, LOW); // Turn off the bulb  
    }  
  
  }  
  
  delay(2000);  
}
```

Include Libraries:

#include <ESP8266WiFi.h>: This includes the library necessary for Wi-Fi communication with the ESP8266.

#include <DHT.h>: This includes the library for interfacing with the DHT temperature and humidity sensor.

Wi-Fi Credentials:

char ssid[] = "your_SSID"; and char pass[] = "your_PASSWORD";: You need to replace "your_SSID" and "your_PASSWORD" with your actual Wi-Fi network name (SSID) and password.

Pin Definitions:

#define DHTPIN D1: Defines the digital pin to which the DHT sensor is connected.

#define DHTTYPE DHT11: Specifies the type of DHT sensor being used (DHT11 in this case).

DHT Sensor Initialization:

DHT dht(DHTPIN, DHTTYPE);: This initializes the DHT sensor on the specified pin.

Setup Function:

Serial.begin(115200);: Starts serial communication for debugging at a baud rate of 115200.

WiFi.begin(ssid, pass);: Attempts to connect to the Wi-Fi network using the provided credentials.

The while loop waits until a successful connection is established.

Once connected, it prints a message indicating successful connection.

Device Pin Configuration and Initialization:

pinMode(D2, OUTPUT); to pinMode(D4, OUTPUT);: Sets the specified pins as output for controlling devices (bulb, fan, etc.).

digitalWrite(..., LOW);: Initially turns off all devices.

DHT Sensor Initialization:

`dht.begin();`: Initializes communication with the DHT sensor.

Loop Function:

The loop function repeatedly performs the following tasks:

Reads the humidity and temperature from the DHT sensor.

Checks if the readings are valid (not NaN, which indicates a sensor reading failure).

If the readings are valid, it prints them to the serial monitor.

It then checks the temperature reading and controls the bulb based on a condition. In this example, if the temperature is greater than 25.0°C, it turns on the bulb; otherwise, it turns it off.