ENVIRONMETAL MONITORING
(phase-3)

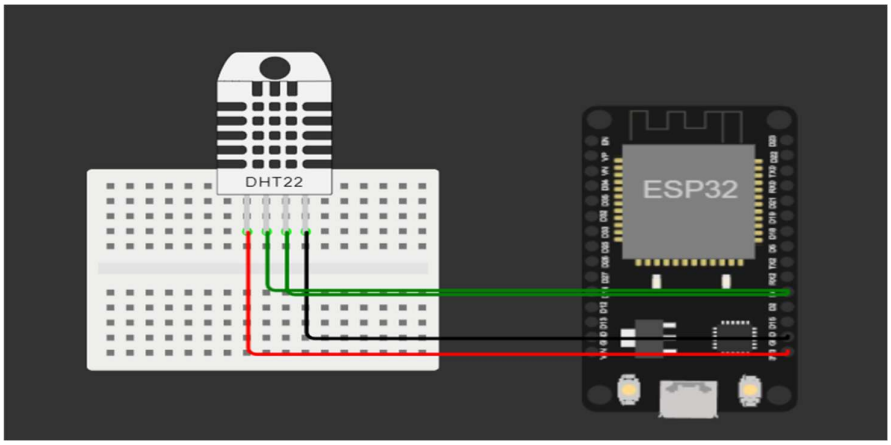
COMPONENTS:

- ESP32
- DHT22 Sensor
- LCD Display
- Connecting Wires

CONSTRUCTION OF THIS PROJECT :

- Select the suitable ESP32 board and the full size breadboard.
- To monitor the temperature and humidity level in public park we choose The DHT22 sensor continuously monitor the levels.
- To display the levels of both temperature and humidity in public park we choose the 16x2 LCD display and also we insert the Wi-Fi module to check the level from far away from the park.
- By connecting the DHT22 sensor and 16x2 LCD display we even monitor the temperature and humidity levels in offline while checking around the park.

SIMULATION:



Library Files:

- HT sensor library
- DHT22
- WiFi
- HttpClient
- PubSubClient
- Firebase ESP32 Client
- FireBase32

CODING:

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

// WiFi credentials
const char* ssid = "Wokwi-GUEST";
const char* password = "";

// Beeceptor endpoint
const char* serverUrl = "https://smartenviron.free.beeceptor.com/smartenviron/";

 // DHT sensor configuration
 #define DHTPIN 4        // Define the GPIO pin to which the DHT22 is connected
 #define DHTTYPE DHT22    // Define the sensor type (DHT11 or DHT22)
 DHT dht(DHTPIN, DHTTYPE);

 void setup() {
 Serial.begin(9600);
 Serial.print("Connecting to WiFi");
  WiFi.begin("Wokwi-GUEST", "", 6);
 while (WiFi.status() != WL_CONNECTED) {
   delay(100);
   Serial.print(".");
 }
 Serial.println(" Connected!");

 // Initialize the DHT sensor
 dht.begin();
}

void loop() {
 // Read temperature and humidity
 float temperature = dht.readTemperature();
 float humidity = dht.readHumidity();

 if (!isnan(temperature) && !isnan(humidity)) {
   // Create an HTTP client
   HTTPClient http;
```

```
  // Send temperature and humidity data to Beeceptor as form parameters
  String postData = "temperature=" + String(temperature) + "&humidity=" + String(humidity);
  http.begin(serverUrl);
  http.addHeader("Content-Type", "application/x-www-form-urlencoded");
  int httpResponseCode = http.POST(postData);

  if (httpResponseCode > 0) {
    Serial.print("HTTP Response code: ");
    Serial.println(httpResponseCode);
    Serial.println("Data sent to Beeceptor.");
  } else {
    Serial.print("Error in HTTP request. HTTP Response code: ");
    Serial.println(httpResponseCode);
  }

  http.end();
 } else {
  Serial.println("Failed to read from DHT sensor!");
 }

 delay(60000); // Send data every 1 minute (adjust as needed)
}
```

PROJECT-ID:PROJ_224686_TEAM_1

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