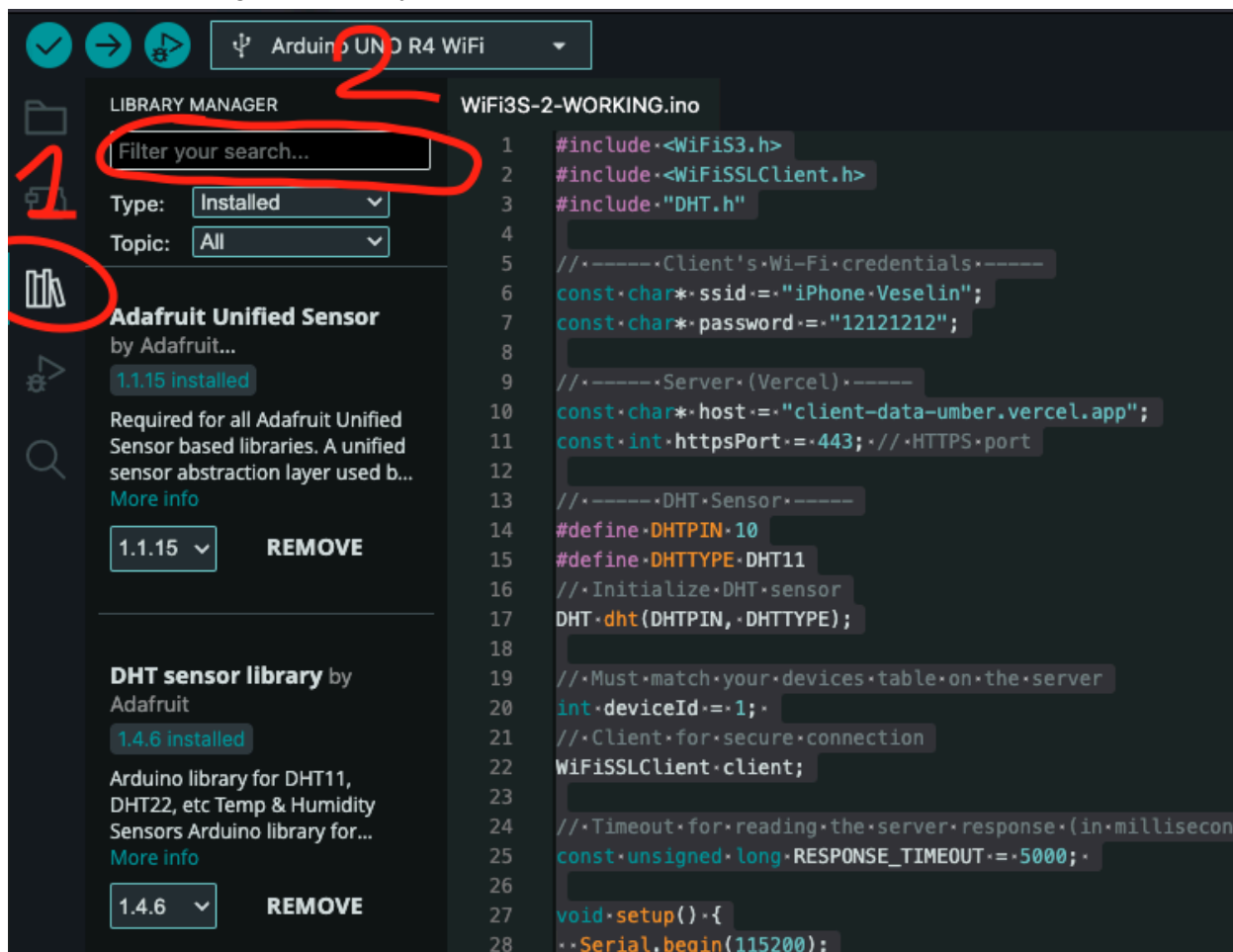


Instrutruction to set up humidity and temperature sensor for your home

Prerequisites: Arduino IDE

Step 1

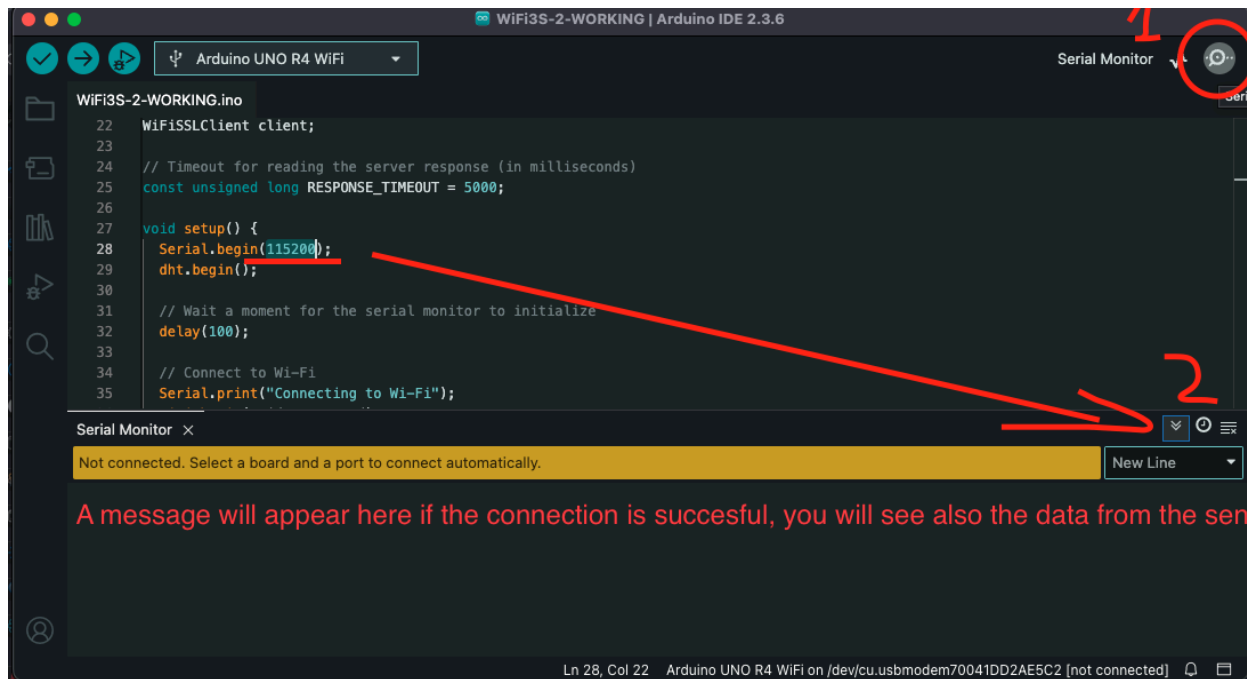
Install the following libraries to your computer



Step 3

Upload the code below to arduino IDE & add your wifi name and password

You can run the code, upload the code and check the serial monitor to see if the wifi works correctly. When checking the serial monitor you need to select **115200** in the drop down of the serial monitor window



```
#include <WiFi3.h>
#include <WiFiSSLClient.h>
#include "DHT.h"

// ----- Client's Wi-Fi credentials -----
const char* ssid = "iPhone Veselin";
const char* password = "12121212";

// ----- Server (Vercel) -----
const char* host = "client-data-umber.vercel.app";
const int httpsPort = 443; // HTTPS port

// ----- DHT Sensor -----
#define DHTPIN 10
#define DHTTYPE DHT11
// Initialize DHT sensor
DHT dht(DHTPIN, DHTTYPE);

// Must match your devices table on the server
int deviceId = 1;
// Client for secure connection
WiFiSSLClient client;

// Timeout for reading the server response (in milliseconds)
```

```

const unsigned long RESPONSE_TIMEOUT = 5000;

void setup() {
  Serial.begin(115200);
  dht.begin();

  // Wait a moment for the serial monitor to initialize
  delay(100);

  // Connect to Wi-Fi
  Serial.print("Connecting to Wi-Fi");
  WiFi.begin(ssid, password);
  while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }
  Serial.println("\n✅ Connected to Wi-Fi!");
  Serial.print("IP Address: ");
  Serial.println(WiFi.localIP());
}

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

  if (isnan(temperature) || isnan(humidity)) {
    Serial.println("❌ Failed to read DHT sensor!");
    delay(2000);
    return;
  }

  // Print sensor readings
  Serial.print("🌡 Temp: "); Serial.print(temperature);
  Serial.print(" °C, 💧 Humidity: "); Serial.println(humidity);

  // Connect to Vercel API
  Serial.print("Attempting connection to ");
  Serial.print(host);
  Serial.print("...");

  if (!client.connect(host, httpsPort)) {
    // This handles network failure *before* request

```

```

    Serial.println("❌ Connection to server failed! Waiting 10s before retry.");
    delay(10000);
    return;
}

Serial.println("✅ Connected!");

// Build JSON payload
// Using String(float, decimals) for better control over precision
String json = "{\"device_id\":\"" + String(deviceId) +
               "\",\"temperature\":\"" + String(temperature, 2) +
               "\",\"humidity\":\"" + String(humidity, 2) + "\"}";

// Build HTTPS POST request
String req = String("POST /api/devices-data HTTP/1.1\r\n") +
             "Host: " + host + "\r\n" +
             "User-Agent: ArduinoUnoR4WiFi\r\n" +
             "Content-Type: application/json\r\n" +
             "Content-Length: " + String(json.length()) + "\r\n" +
             "Connection: close\r\n\r\n" +
             json;

client.print(req);
Serial.println("📡 Sent HTTPS request (Payload size: " + String(json.length()) + "
bytes).");

// --- MODIFIED RESPONSE READING LOGIC WITH TIMEOUT ---
Serial.println("\n--- Server Response ---");
String response = "";
unsigned long startTime = millis();
// Read all available bytes until the client disconnects or timeout is reached
while (client.connected() && (millis() - startTime < RESPONSE_TIMEOUT)) {
    if (client.available()) {
        // Read all available bytes into the response string
        char c = client.read();
        response += c;
        // Reset the start time whenever data is received to keep the window open
        startTime = millis();
    }
    delay(1); // Give the system time to handle other tasks/network buffering
}
if (response.length() > 0) {

```

```
    Serial.println(response); // Print the whole response (headers + body)
} else {
    Serial.println("❌ No full response received or read timeout reached.");
}

// --- END MODIFIED RESPONSE READING LOGIC ---

client.stop();
// Ensure SSL session resources are fully released
delay(500);

Serial.println("✅ Transaction Complete!\n");

// Wait 15 minute before next reading
delay(900000);
}
```

Step 3

Connect arduino to the power supply with the provided cable

Step 4

Press the button next to the board

Step 5

Leave the sensor somewhere safe close to in the room where you sleep(not too close to heating sources or windows to get accurate measurement)