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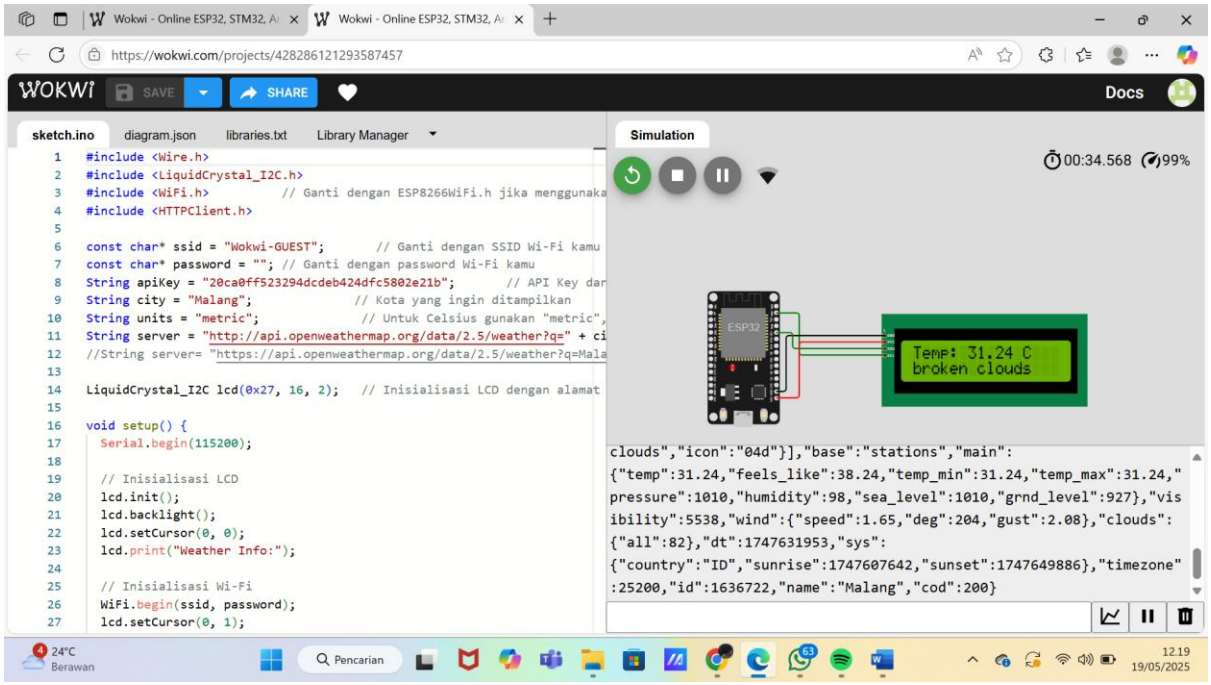
T4I

LAPORAN UJI COBA

PENGEMBANGAN PANTAUAN CUACA WOKWI

TAMPILAN AWAL



KODE AWAL

```
#include <Wire.h>
#include <LiquidCrystal_I2C.h>
#include <WiFi.h>          // Ganti dengan ESP8266WiFi.h jika menggunakan ESP8266
#include <HTTPClient.h>


const char* ssid = "Wokwi-GUEST";       // Ganti dengan SSID Wi-Fi kamu
const char* password = ""; // Ganti dengan password Wi-Fi kamu
String apiKey = "20ca0ff523294dcdeb424dfc5802e21b";       // API Key dari OpenWeatherMap
String city = "Malang";              // Kota yang ingin ditampilkan
```

```
String units = "metric";              // Untuk Celsius gunakan "metric", untuk Fahrenheit "imperial"
String server = "http://api.openweathermap.org/data/2.5/weather?q=" + city + "&units=" + units + "&appid=" + apiKey;
//String server= "https://api.openweathermap.org/data/2.5/weather?q=Malang&appid=20ca0ff523294dcdeb424dfc5802e21b";

LiquidCrystal_I2C lcd(0x27, 16, 2);   // Inisialisasi LCD dengan alamat I2C 0x27

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

  // Inisialisasi LCD
  lcd.init();
  lcd.backlight();
  lcd.setCursor(0, 0);
  lcd.print("Weather Info:");

  // Inisialisasi Wi-Fi
  WiFi.begin(ssid, password);
  lcd.setCursor(0, 1);
  lcd.print("Connecting...");
  while (WiFi.status() != WL_CONNECTED) {
    delay(1000);
    Serial.println("Connecting to WiFi...");
  }
  lcd.clear();
  lcd.setCursor(0, 0);
  lcd.print("Connected!");
  delay(2000);
  lcd.clear();
```

```
}

void loop() {
  if ((WiFi.status() == WL_CONNECTED)) {  // Check WiFi connection status

    HTTPClient http;
    http.begin(server);     // Specify the URL
    int httpCode = http.GET();  // Make the request

    if (httpCode > 0) { // Check for the returning code

      String payload = http.getString();
      Serial.println(payload);   // Print the response payload

      // Parse data (extract temperature)
      int tempIndex = payload.indexOf("temp");
      String temp = payload.substring(tempIndex + 6, payload.indexOf(",", tempIndex));

      // Display temperature on LCD
      lcd.setCursor(0, 0);
      lcd.print("Temp:");
      lcd.setCursor(6, 0);
      lcd.print(temp);
      lcd.print(" C");

      // Extract weather description
      int descIndex = payload.indexOf("description");
      String desc = payload.substring(descIndex + 14, payload.indexOf("\"", descIndex + 14));

      // Display description on LCD
```

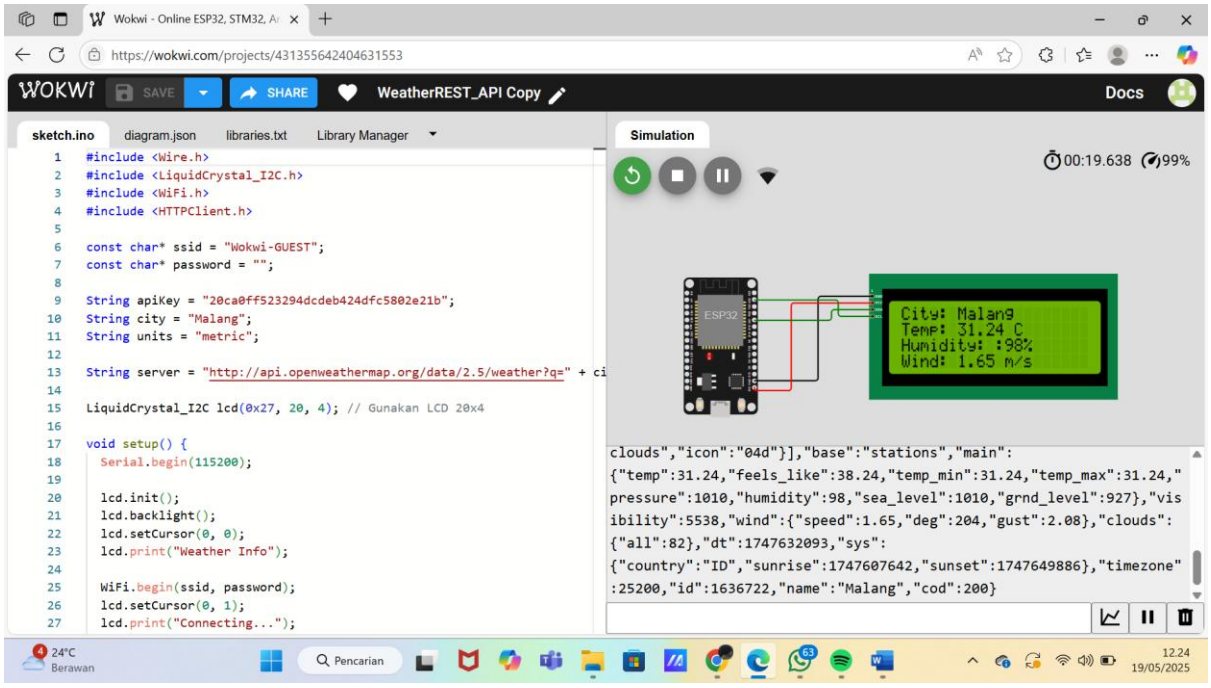
```
    lcd.setCursor(0, 1);
    lcd.print(desc);

  } else {
    Serial.println("Error on HTTP request");
  }

  http.end();  // Free the resources
 }

 delay(60000);  // Update every minute
}
```

TAMPILAN AKHIR



KODE

```
#include <Wire.h>
#include <LiquidCrystal_I2C.h>
#include <WiFi.h>
#include <HTTPClient.h>
```

```
const char* ssid = "Wokwi-GUEST";
const char* password = "";

String apiKey = "20ca0ff523294dcdeb424dfc5802e21b";
String city = "Malang";
String units = "metric";

String server = "http://api.openweathermap.org/data/2.5/weather?q=" + city + "&units=" + units + "&appid=" + apiKey;

LiquidCrystal_I2C lcd(0x27, 20, 4); // Gunakan LCD 20x4

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

  lcd.init();
  lcd.backlight();
  lcd.setCursor(0, 0);
  lcd.print("Weather Info");

  WiFi.begin(ssid, password);
  lcd.setCursor(0, 1);
  lcd.print("Connecting...");
  while (WiFi.status() != WL_CONNECTED) {
    delay(1000);
    Serial.println("Connecting to WiFi...");
  }

  lcd.clear();
  lcd.setCursor(0, 0);
```

```
  lcd.print("Connected to WiFi");
  delay(2000);
  lcd.clear();
}

void loop() {
  if ((WiFi.status() == WL_CONNECTED)) {
    HTTPClient http;
    http.begin(server);
    int httpCode = http.GET();

    if (httpCode > 0) {
      String payload = http.getString();
      Serial.println(payload);

      // Ambil data suhu
      int tempIndex = payload.indexOf("temp");
      String temp = payload.substring(tempIndex + 6, payload.indexOf(",", tempIndex));

      // Ambil deskripsi cuaca
      int descIndex = payload.indexOf("description");
      String desc = payload.substring(descIndex + 14, payload.indexOf("\"", descIndex + 14));

      // Ambil kelembapan
      int humIndex = payload.indexOf("humidity");
      String humidity = payload.substring(humIndex + 9, payload.indexOf(",", humIndex));

      // Ambil kecepatan angin
      int windIndex = payload.indexOf("speed");
      String wind = payload.substring(windIndex + 7, payload.indexOf(",", windIndex));
```

```
  // Tampilkan di LCD 20x4
  lcd.clear();
  lcd.setCursor(0, 0);
  lcd.print("City: " + city);

  lcd.setCursor(0, 1);
  lcd.print("Temp: " + temp + " C");

  lcd.setCursor(0, 2);
  lcd.print("Humidity: " + humidity + "%");

  lcd.setCursor(0, 3);
  lcd.print("Wind: " + wind + " m/s");

  // Tunggu lalu tampilkan deskripsi
  delay(8000);
  lcd.clear();
  lcd.setCursor(0, 1);
  lcd.print("Weather:");
  lcd.setCursor(0, 2);
  lcd.print(desc);
 } else {
  Serial.println("Error on HTTP request");
  lcd.clear();
  lcd.setCursor(0, 0);
  lcd.print("HTTP Error");
 }

http.end();
```

```
  }

  delay(60000); // Update setiap 1 menit
}
```