Project 24:

Wemos Web Server with HTML Web Page

Using Temperature

Introduction

A Web server is a program that uses HTTP (Hypertext Transfer Protocol) to serve the files that form Web pages to users, in response to their requests, which are forwarded by their computers' HTTP clients.
To implement web server on ESP, there are two ways to make your first web server first connect to your Wi-Fi router or make ESP as access point.

And getting data of real time of temperature.

COMPONENTS: -

1. DHT11
2. WEMOS

APPLICATION: -

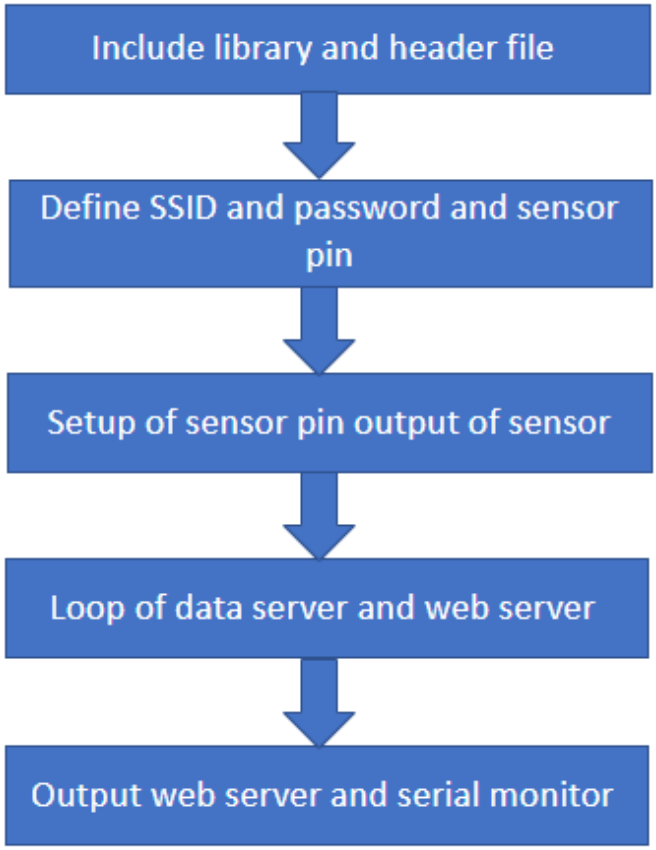
Web Application: Web application is a piece of software that can be accessed by the browser. A Browser is an application that is used to browse the internet.

OBJECTIVE: -

HTML Learning Objectives

- Insert a graphic within a web page.
- Create a link within a web page.
- Create a table within a web page.
- Insert heading levels within a web page.
- Insert ordered and unordered lists within a web page.
- Use cascading style sheets.
- Create a web page.
- Validate a web page.

FLOW CHART: -



PROGRAMMING: -

```
#include <ESP8266WiFi.h>

#include <WiFiClient.h>

#include <ESP8266WebServer.h>


#include "index.h" //Our HTML webpage contents


//SSID and Password of your WiFi router
```

```
const char* ssid = "Circuits4you.com";
const char* password = "123456789";

ESP8266WebServer server(80); //Server on port 80

//==============================================================
// This routine is executed when you open its IP in browser
//==============================================================
void handleRoot() {
 String s = MAIN_page; //Read HTML contents
 server.send(200, "text/html", s); //Send web page
}
//==============================================================
//                  SETUP
//==============================================================
void setup(void){
  Serial.begin(9600);

  WiFi.begin(ssid, password);     //Connect to your WiFi router
```

```
  Serial.println("");

  // Wait for connection
  while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }

  //If connection successful show IP address in serial monitor
  Serial.println("");
  Serial.print("Connected to ");
  Serial.println(ssid);
  Serial.print("IP address: ");
  Serial.println(WiFi.localIP());  //IP address assigned to your
ESP

  server.on("/", handleRoot);      //Which routine to handle at
root location

  server.begin();                  //Start server
  Serial.println("HTTP server started");
}
```

```
//================================================================

//                    LOOP

//================================================================

void loop(void){

  server.handleClient();          //Handle client requests

}
```

Index file

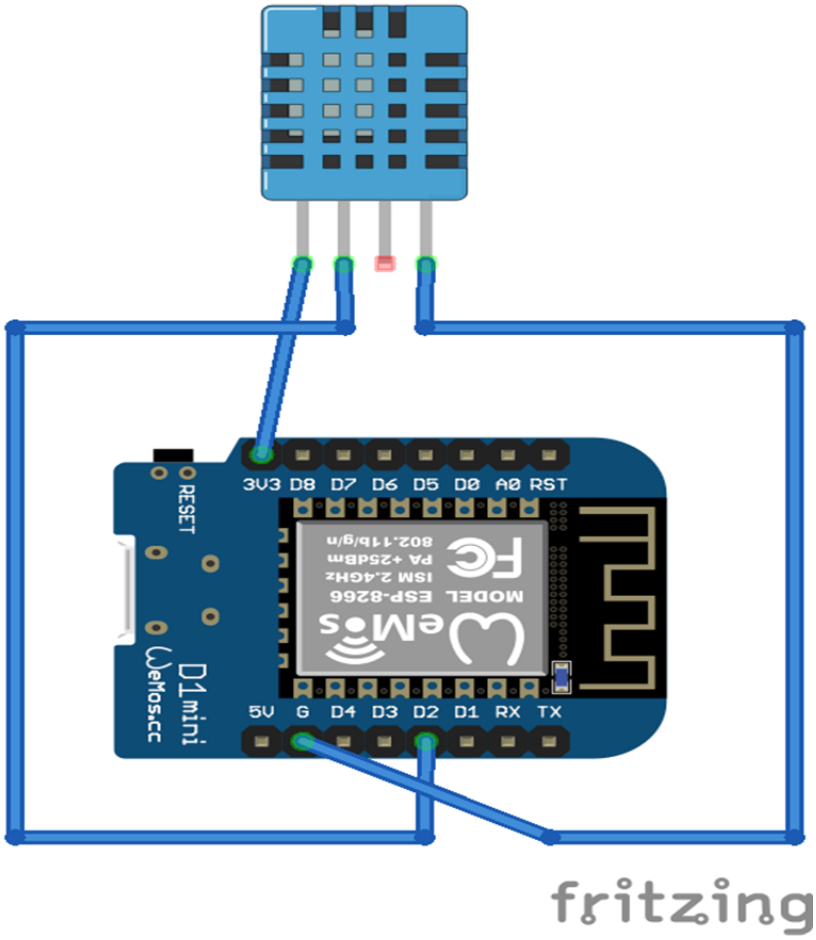
index.h file

```
const char MAIN_page[] PROGMEM = R"=====(<HTML>     <HEAD>
      <TITLE>My first web page</TITLE>   </HEAD><BODY>     <CENTER>
      <B>Hello World.... </B>      </CENTER>      </BODY></HTML>)=====";
```

HARDWARE CONNECTION: -

1. Connect DHT11 data pin to 3.3v
2. Connect wemos data pin to 3.3v
3. Connect pin GND to GND
4. Connect sensor pin D0 to D2

CIRCUIT DIAGRAM: -


3V3 D8 D7 D6 D5 D0 A0 RST
RESET
MODEL ESP-8266
ISM 2.4GHz
PA +25dBm
802.11b/g/n
D1 mini
WeMos.cc
5V G D4 D3 D2 D1 RX TX
fritzing