**IOT BASED DEVICE CONTROL USING**

**WEB BROWSER(LOCAL)**

1.ESP-8266 PROGRAM:

**USING HOTSPOT:-**

//This is PROGRAM FOR RELAY BASED BULB ON & OFF

//PHASE/LINE CONNECTED TO RELAY'S COMMON, ONE END WIRE FROM BULB CONNECTED TO NC

//AND OTHER WIRE OF BULB CONNECTED ON NEUTRAL

//wifi detection on mobile and using chrome webbrowser giving command wifi ip add->192.168.4.1/lon for RELAY on

//and 192.168.4.1/loff for RELAY-off

//feedback from relay chatter display on and off................

**#include <ESP8266HTTPClient.h> //HERE MOBILE AS SERVER FOR THIS HEADER ADDED**

**#include <ESP8266WiFi.h>**

**#include <ESP8266WebServer.h>**

const char\* ssid = "IOT\_SSD\_CNT"; //MOBILE HOTSPOT USER NAME IN MOB SETTING

const char\* password = "123456789"; //MOBILE HOTSPOT PASSW'D SET IN WIFI MOB SETTING

ESP8266WebServer server(80); // SERVER FREQENCY

const char getPage[] PROGMEM = {"<!DOCTYPE html>\n<html>\n<head>\n<meta name=\"viewport\" content=\"width=device-width, initial-scale=1\">\n<style>\nbody{\nbackground-color: #aba;\ntext-align: center;\n }\n\n.button {\n background-color: #3e8e41;\n border: none;\n color: white;\n padding: 17px;\n text-align: center;\n text-decoration: none;\n display: inline-block;\n font-size: 19px;\n margin: 30px 4px;\n cursor: pointer;\n box-shadow: 0 5px #666;\n\tborder-radius: 9px\n}\n\nf1 {\n \ttext-align: center;\n color: darkblue;\n font-family:arial;\n font-size: 18px;\n}\n\n.button:hover {background-color: #ff9800}\n\n</style>\n</head>\n<body>\n<h1 align=\"center\">

**IOT based local page controlled Device switching**</h1>\n<div id=\"myDIV\" align=\"center\">\n<a

href=\\/192.168.4.1/01><input type=\"button\" class=\"button\" value=\"Device - 1\"></a>\n<a href=\\/192.168.4.1/02><input type=\"button\" class=\"button\" value=\"Device - 2\"></a>\n<a href=\\/192.168.4.1/03><input type=\"button\" class=\"button\" value=\"Device - 3\"></a>\n<a href=\\/192.168.4.1/04><input type=\"button\" class=\"button\" value=\"Device - 4\"></a>\n<a href=\\/192.168.4.1/05><input type=\"button\" class=\"button\" value=\"Device - 5\"></a>\n<a href=\\/192.168.4.1/06><input type=\"button\" class=\"button\" value=\"Device - 6\"></a>\n<a href=\\/192.168.4.1/07><input type=\"button\" class=\"button\" value=\"Device - 7\"></a>\n<a href=\\/192.168.4.1/08><input type=\"button\" class=\"button\" value=\"Device - 8\"></a >\n < / div> \n\n<f1><strong>

**PROLIFIC SYSTEMS AND TECHNOLOGIES PVT. LTD**. </strong></f1 >\n\n</body>\n</html>\n"};

**void handleRoot()**

{

server.send\_P( 200, "text/html", getPage);

}

**void handle01()**

{

digitalWrite(14, 0);

digitalWrite(12, 0);

digitalWrite(13, 0);

digitalWrite(16, 1); //ESP8266 D0 PIN ON

**handleRoot();**

delay(25);

}

**void handle02()**

{

digitalWrite(14, 1);

digitalWrite(12, 0);

digitalWrite(13, 0);

digitalWrite(16, 0);//ESP8266 D0 PIN OFF

**handleRoot();**

delay(25);

}

**void handle03()**

{

digitalWrite(14, 0);

digitalWrite(12, 1);

digitalWrite(13, 0);

digitalWrite(5, 1);// ESP8266 D1 PIN ON

**handleRoot();**

delay(25);

}

**void handle04()**

{

digitalWrite(14, 1);

digitalWrite(12, 1);

digitalWrite(13, 0);

digitalWrite(5, 0);// ESP8266 D1 PIN OFF

**handleRoot();**

delay(25);

}

**void handle05()**

{

digitalWrite(14, 0);

digitalWrite(12, 0);

digitalWrite(13, 1);

**handleRoot();**

delay(25);

}

**void handle06()**

{

digitalWrite(14, 1);

digitalWrite(12, 0);

digitalWrite(13, 1);

**handleRoot();**

delay(25);

}

**void handle07()**

{

digitalWrite(14, 0);

digitalWrite(12, 1);

digitalWrite(13, 1);

**handleRoot();**

delay(25);

}

**void handle08()**

{

digitalWrite(14, 1);

digitalWrite(12, 1);

digitalWrite(13, 1);

**handleRoot();**

delay(25);

}

**void setup(void)**

{

pinMode(14, OUTPUT); //ESP8266 PIN 14-D5 SET AS AN OUTPUT

pinMode(12, OUTPUT); //ESP8266 PIN 12-D6 SET AS AN OUTPUT

pinMode(13, OUTPUT);// ESP8266 PIN 13-D7 SET AS AN OUTPUT

pinMode(16, OUTPUT); // GPIO D0

pinMode(5, OUTPUT); // GPIO D1

digitalWrite(14, 0);

digitalWrite(12, 0);

digitalWrite(13, 0);

digitalWrite(16, 0);

digitalWrite(5, 0);

Serial.begin(115200);//BAUD RATE

Serial.println();

Serial.print("Configuring access point...");

Serial.println(ssid);

WiFi.mode(WIFI\_STA);//MOBILE WILL ACTS AS WIFI STATION using HOTSPOT

WiFi.softAP(ssid, password); //GENERATE PASSWORD AND USER NAME

while (WiFi.status()!= WL\_CONNECTED)

{

delay(500);

Serial.print(".");

}

Serial.println("");

Serial.println("WiFi connected");

Serial.println("ip address: ");

Serial.println(WiFi.localIP());//IT'LL DISPLAY MOBILE IP ON SERIAL WINDOW

//IF IP IS NOT DISPLAYING THEN PRESS RESET BUTTON ON WIFI

//IPAddress myIP = WiFi.softAPIP();//GENERTION OF IP ADD FROM SERIAL COMMU..

//Serial.print("AP IP address: ");

// Serial.println(myIP); //PRINTF IP ADD

server.begin();

server.on("/", handleRoot);

server.on("/01", handle01);//HANDLE01 COMBINATION FR0M HANDLEROOT **000**  1ST  LED ON AND RELAY1 D0-16 **ON**

server.on("/02", handle02); //HANDLE02 COMBINATION FR0M HANDLEROOT **001**  2 NDLED ON AND RELAY1 D0-16 **OFF**

server.on("/03", handle03); //HANDLE03 COMBINATION FR0M HANDLEROOT **010** 3RD  LED ON AND RELAY2 D0-5 **ON**

server.on("/04", handle04); //HANDLE04 COMBINATION FR0M HANDLEROOT **011** 4TH  LED ON AND RELAY2 D0-5 **OFF**

server.on("/05", handle05); //HANDLE05 COMBINATION FR0M HANDLEROOT **100**  5TH  LED ON AND

server.on("/06", handle06); //HANDLE06 COMBINATION FR0M HANDLEROOT **101** 6TH  LED ON AND

server.on("/07", handle07); //HANDLE07 COMBINATION FR0M HANDLEROOT **110** 7TH  LED ON AND

server.on("/08", handle08); //HANDLE08 COMBINATION FR0M HANDLEROOT **111** 8TH  LED ON AND

server.begin();

Serial.println("HTTP server started");

}

**void loop(void)**

{

server.handleClient();

}

**2.8051 PROGRAM**

//kit 1 for webpage local as well as feedback for kit2

//this is final program from esp8266 to 8051 combination of leds...

**#include<reg51.h>**

**#define ssd P0**

**#define led P1**

**#define sl P2**

void delay(unsigned int time);

void display();

unsigned char var,ds1,ds2,ds3,ds4;

code unsigned char disp[10]={0x60,0xDA,0xF2,0x66,0xB6,0xBE,0xE0,0xFE};

//code unsigned char led\_val[10]={0xfe,0xfd,0xfb,0xf7,0xef,0xdf,0xbf,0x7f};

code unsigned char led\_val[10]={0x01,0x02,0x04,0x08,0x10,0x20,0x40,0x80};

**void main()**

{

led=ds1=ds2=ds3=ds4=0x00;

ds4=0x1c; //for L

ds3=0xde; //for e

ds2=0x7a; //for d

**while(1)**

{

var=P2&0xE0;

led=led\_val[var>>5]; //msb data shift by 5

ds1=disp[var>>5]; //sending data on zeroth position from 5th position

display(); //from 5 6 7 to 0 1 2

led=ds1=0x00;

}

}

**void display()**

{

sl=0x0e;

ssd=ds1;

delay(5);

sl=0x0d;

ssd=ds2; //for d

delay(5);

sl=0x0b;

ssd=ds3; //for e

delay(5);

sl=0x07;

ssd=ds4; //for L

delay(5);

}

**void delay(unsigned int time)**

{

unsigned int i,j;

for(i=0;i<time;i++)

for(j=0;j<=120;j++);

}

**3.KIT CONNECTIONS**

* **12v Power Supply.**
* **3.3v ESP8266.**

**ESP-8051-SELECTLINE-CONNECTIONS:**

|  |  |
| --- | --- |
| **ESP PIN** | **8051 PIN** |
| PIN D5(14) | PIN P2.5 |
| PIN D6(12) | PIN P2.6 |
| PIN D7(13) | PIN P2.7 |
| GND | GND(P2) |

**ESP-RELAY-CONNECTIONS:**

|  |  |
| --- | --- |
| **ESP PIN** | **RELAY PIN** |
| PIN D0(16) | IN1 |
| PIN D1(5) | IN2 |