#include <ESP8266WiFi.h>

#include <WiFiClient.h>

#include <ESP8266WebServer.h>

#include <Wire.h>

#include <LiquidCrystal\_I2C.h>

LiquidCrystal\_I2C lcd(0x27,16,2);  // set the LCD address to 0x27 for a 16 chars and 2 line display

int alarm = D6;

int led   = D7;

int pin   = A0;

/\* Set these to your desired credentials. \*/

const char \*ssid = "";

const char \*password = "";

const char \*host = "api.thingspeak.com";

String apiKey = "2P44FE58OF5D54AQ";

void setup() {

  // put your setup code here, to run once:

pinMode(pin, INPUT);

pinMode(led,OUTPUT);

pinMode(alarm,OUTPUT);

lcd.init();

lcd.backlight();

lcd.setCursor(0,0);

lcd.print("CO2 Level in PPM");

Serial.begin(115200);

WiFi.mode(WIFI\_STA);

Serial.println();

  Serial.print("Connecting to Wifi");

  Serial.print(ssid);

  WiFi.begin(ssid, password);

  Serial.println();

  Serial.print("Connecting ");

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

  delay(500);

  Serial.println(".");

  }

  Serial.println("Node MCU IP Address:");

  Serial.println(WiFi.localIP());

}

void loop() {

  // put your main code here, to run repeatedly:

WiFiClient client;

const int httpPort = 80;

//Connect to host, host(website) is define at top

if(!client.connect(host, httpPort)){

  Serial.println("Connection Failed");

  delay(300);

  return; // Keep retrying until we get connected

}

//Make GET request as per the HTTP GET protocol format

String ADCData;

int adcvalue = analogRead(pin);

Serial.println(adcvalue);

if (adcvalue > 350){

  digitalWrite(led,HIGH);

  digitalWrite(alarm,HIGH);

  lcd.clear();

  lcd.setCursor(0,0);

  lcd.print("Danger  !!!!");

  lcd.setCursor(1,1);

  lcd.print("CO2 ABOVE NORMAL");

}

else if(adcvalue < 350){

  digitalWrite(led,LOW);

  digitalWrite(alarm,LOW);

  lcd.clear();

  lcd.setCursor(0,0);

  lcd.print("CO2 LEVEL GOOD");

  lcd.setCursor(1,1);

  lcd.print("PPM : ");

  lcd.setCursor(8,1);

  lcd.print(adcvalue);

}

ADCData = String (adcvalue); //Integer to string conversion

String Link = "GET /update?api\_key="+apiKey+"&field1="; // Request Webpage

Link = Link + ADCData;

Link = Link + "HTTP/1.1\r\n" + "Host: " + host + "\r\n" + "Connection: close\r\n\r\n";

client.print(Link);

delay(100);

//Wait for server to respond to timeout of 5 seconds

int timeout = 0;

while((!client.available()) && (timeout < 1000)){

  delay(10); // use this with timeout

  timeout++;

}

/\*

// Reading through data

if (timeout < 500){

while(client.available()){

   Serial.println(client.readString()); // Reading From Cloud

   }

  }

  else {

Serial.println("Request Timeout..");

delay(5000);  // Read Page every 5 seconds

  }\*/

}