//IOT WATER QUALITY MONITOR

#include <SoftwareSerial.h>

#include <LiquidCrystal.h>

//-----------------------------------------------------------------------------------------------------------------------------------

SoftwareSerial esp(7, 8);

LiquidCrystal lcd( 12,11, 2,3, 4, 5);

int x,y,z,l,y1;

int z1,x1;

float h;

float t;

const int buzzer=13;

//---------------------------------------------------------------------------

String g1\_level\_string = "";

String g2\_level\_string = "";

String wp\_level\_string = "";

String ApiKey = "TDPU28J866QZBRCB";

String field1 = "&field1=";

String field2 = "&field2=";

String field3 = "&field3=";

//-----------------------------------------------------------------------------------------------------------------------------------

void setup()

{

pinMode(buzzer,OUTPUT);

Serial.begin(9600);

esp.begin(115200);

lcd.begin(16,2);

esp.println("AT+RST");

lcd.clear();

lcd.setCursor(0,0);

lcd.print("IOT WATER ");

lcd.setCursor(0,1);

lcd.print("QUALITY MONITOR ");

delay(6000);

lcd.clear();

lcd.setCursor(0,0);

lcd.print("TURB: ");

lcd.setCursor(0,1);

lcd.print("S%: T: ");

}

//-----------------------------------------------------------------------------------------------------------------------------------

void loop()

{

sense\_loop();

post();

delay(700);

}

//-----------------------------------------------------------------------------------------------------------------------------------

void post()

{

String cmd = "AT+CIPSTART=\"TCP\",\"";

cmd += "184.106.153.149"; // api.thingspeak.com

cmd += "\",80";

esp.println(cmd);

if(esp.find("ERROR"))

{

//Serial.println("AT+CIPSTART error");

return;

}

delay(100);

//------------------------add fields--------------------

String getStr = "GET /update?api\_key=";

getStr += ApiKey;

getStr += field1;

getStr += g1\_level\_string;

getStr += field2;

getStr += g2\_level\_string;

getStr += field3;

getStr += wp\_level\_string;

getStr += "\r\n\r\n";

// Serial.print(getStr);

//------------------------------------------------------

cmd = "AT+CIPSEND=";

cmd += String(getStr.length());

//cmd += String(str.length());

esp.println(cmd);

if(esp.find(">"))

{

esp.print(getStr);

//esp.print(str);

delay(2000);

}

}

//-----------------------------------------------------------------------------------------------------------------------------------

void sense\_loop()

{

delay(2000);

x=analogRead(0);

y=analogRead(1);

z=analogRead(2);

x1=map(x,0,1023,0,100);

y1=map(y,0,1023,100,0);

z1=map(z,0,1023,0,255);

delay(500);

lcd.setCursor(7,0);

lcd.print(" ");

lcd.setCursor(7,0);

lcd.print(x1);

lcd.setCursor(3,1);

lcd.print(" ");

lcd.setCursor(3,1);

lcd.print(y1);

lcd.setCursor(13,1);

lcd.print(" ");

lcd.setCursor(13,1);

lcd.print(z1);

if ((x1>50)||(y1>50)||(y1>50))

{

digitalWrite(buzzer,1);

}

else

{

digitalWrite(buzzer,0);

}

g1\_level\_string = String (x1) ;

g2\_level\_string = String (y1) ;

wp\_level\_string = String (z1) ;

}

//\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*