#include <SoftwareSerial.h>

//ESP 8266

String apiKey = "9HAUJZNQQ1JMDNWM";

// connect 10 to TX of Serial USB

// connect 11 to RX of serial USB

SoftwareSerial ser(8,11); // RX, TX

const int trigPin = 9;

const int echoPin = 10;

const int irpin=6;

int isObstacle;

long duration;

int distance;

int temp;

void setup() {

pinMode(trigPin, OUTPUT);

pinMode(echoPin, INPUT);

pinMode(irpin, INPUT);

pinMode(A0,INPUT);

pinMode(2,OUTPUT);

digitalWrite(2,HIGH);

ser.begin(115200); // Reset ESP8266

ser.println("AT+RST");

Serial.begin(9600);

}

void loop() {

digitalWrite(trigPin, LOW);

delayMicroseconds(2);

digitalWrite(trigPin, HIGH);

delayMicroseconds(10);

digitalWrite(trigPin, LOW);

duration = pulseIn(echoPin, HIGH);

// Calculating the distance

distance= duration\*0.034/2;

// Prints the distance on the Serial Monitor

Serial.print("Distance: ");

Serial.println(distance);

isObstacle = digitalRead(irpin);

Serial.println(isObstacle);

temp = analogRead(A0);

temp = temp \* 0.48828125;

Serial.print("TEMPERATURE = ");

Serial.println(temp);

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

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

cmd += "\",80";

ser.println(cmd);

if(ser.find("Error")){

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

return;

}

//GET string

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

getStr += apiKey;

getStr +="&field1=";

getStr += String(distance);

getStr +="&field2=";

getStr += String(isObstacle);

getStr +="&field3=";

getStr += String(temp);

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

//Sending

cmd = "AT+CIPSEND=";

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

ser.println(cmd);

if(ser.find(">")){

//Send string

ser.print(getStr);

}

else{

ser.println("AT+CIPCLOSE");

Serial.println("AT+CIPCLOSE");

}

delay(16000);

}