

APPENDIX

CODING ARDUINO

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#include <Arduino.h>
#define DEBUG true
#include <SoftwareSerial.h>
int sensorpir = 2; //Infrared
int sensorapi = 3; //Api
int led = 13; // Buzzer
int nilaipir; // Untuk mengeluarkan data infrared
int nilaiapi; // Untuk mengeluarkan data api
int nilaipir1;
int nilaiapi1;
int hasil; // Untuk Fuzzy Logic
SoftwareSerial wifi(6, 7); // RX, TX
String apiKey = "JAFFTUJQ99R26IT3"; //WRITE API KEY
//02. SSID
String mySSID = "Vinsensius15"; // Nama Wi-Fi
//03. PASSWORD
String myPASSWORD = "iribilangbos"; // Password Wi-Fi
char myerr[] = "Error";
char mygreater[] = ">";
void setup()
{
  pinMode(sensorapi, INPUT);
  pinMode(sensorpir, INPUT);
  pinMode(led,OUTPUT);
  Serial.begin(9600);
  Serial.begin(115200);
  wifi.begin(115200); // baudrate komunikasi serial arduino
  dengan Esp8266
  Serial.println("Starting to begin..");
  while (connectWithATcommand() == 0) { //Function to connect
  wifi with AT command
    Serial.println("Trying to connect.....");
  };
  Serial.println("End of setup()");
  wifi.println("AT+CIFSR");
}
void loop()
{
  nilaipir = digitalRead(sensorpir);
  nilaiapi = digitalRead(sensorapi);
  nilaipir1 = analogRead(sensorpir);
  nilaiapi1 = analogRead(sensorapi);
  if(nilaipir == LOW && nilaiapi == LOW) // LOW = Mendeteksi,
  HIGH = Tidak mendeteksi
  {
    hasil = 3;
    digitalWrite(led,HIGH);
    Serial.println(nilaipir);
    Serial.println(nilaiapi);
    Serial.println(hasil);
  }
}

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}
else if(nilaipir == LOW && nilaiapi == HIGH)
{
    hasil = 1;
    digitalWrite(led,LOW);
    Serial.println(nilaipir);
    Serial.println(nilaiapi);
    Serial.println(hasil);
}
else if(nilaipir == HIGH && nilaiapi == LOW)
{
    hasil = 2;
    digitalWrite(led,HIGH);
    Serial.println(nilaipir);
    Serial.println(nilaiapi);
    Serial.println(hasil);
}
else if(nilaipir == HIGH && nilaiapi == HIGH)
{
    hasil = 0;
    digitalWrite(led,LOW);
    Serial.println(nilaipir);
    Serial.println(nilaiapi);
    Serial.println(hasil);
}
delay(500);

String cmd = "AT+CIPSTART=\"TCP\", \"";
cmd += "184.106.153.149"; //ip thingspeak
cmd += "\",80"; //port http
wifi.println(cmd);

//if(wifi.find("Error")){
if (wifi.find(myerr)) {
    Serial.println("AT+CIPSTART error");
    return;
}
//ESP
//Mengirim Data ke Thingspeak
String getStr = "GET /update?api_key=";
getStr += apiKey;
getStr += "&field1=";
getStr += nilaipir;
getStr += "&field2=";
getStr += nilaiapi;
getStr += "&field3=";
getStr += hasil;
getStr += "&field4=";
getStr += nilaipir1;
getStr += "&field5=";
getStr += nilaiapi1;
getStr += "\r\n\r\n";

//06. send data length

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cmd = "AT+CIPSEND=";
cmd += String(getStr.length());
wifi.println(cmd);
Serial.println("AT+CIPSEND=");

//if(wifi.find(">")){
if (wifi.find(mygreater)) {
    Serial.println(getStr);
    wifi.print(getStr);
    Serial.println("here Sending the GET command (FIELD1 and
FIELD2)");
}
else {
    wifi.println("AT+CIPCLOSE");
    // alert user
    Serial.println("AT+CIPCLOSE"); //reset
    //reconnect(); //it is reseted, go to reconnect
}
}
String sendCommand(String command, const int timeout, boolean
debug)
{
    String response = "";
    wifi.print(command); //execute the command
    long int time = millis();

    while ( (time + timeout) > millis())
    {
        while (wifi.available())
        {
            char c = wifi.read();
            response += c;
        }
    }
    if (debug) {
        Serial.println(response);
    }
    return response;
}

int connectWithATcommand()
{
    //02. Reset modul
    Serial.println("Starting to reset..");
    sendCommand("AT+RST\r\n", 2000, DEBUG);

    //03. Konfigurasi sebagai Akses poin
    Serial.println("Starting to set MODE = 1 (Access Point)");
    sendCommand("AT+CWMODE=1\r\n", 1000, DEBUG);

    //=====
    ==
    //TO LIST ALL ACCESS POINTS

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// Serial.println("Starting to List Access Points");
// sendCommand("AT+CWLAP\r\n",4000,DEBUG);
//TO CHANGE ESP8266 BAUDRATE
//Mengubah esp8266 baud rate menjadi 9600 (dari sebelumnya
115200
// sendCommand("AT+UART_DEF=9600,8,1,0,0\r\n",1000,DEBUG);
//=====
==
//04. TO READ MAC ADDRESS (THIS IS NON COMPULSORY)
Serial.println("Starting to read the MAC address");
sendCommand("AT+CIPSTAMAC?\r\n", 1000, DEBUG);

//05. TO CONNECT AN AP (Sesuaikan dengan SSID dan Password)
Serial.println("Starting to Join to Access Point");
// sendCommand("AT+CWJAP=\"ASUS\", \"ogahbanget\"\r\n",10000,DEBUG);
// sendCommand("AT+CWJAP=\"informatika\", \"\"\r\n",10000,DEBUG);
String mycmd = "AT+CWJAP=";
mycmd += "\"";
mycmd += mySSID; //mySSID from setup
mycmd += "\",";
mycmd += "\"";
mycmd += myPASSWORD; //myPASSWORD from setup
mycmd += "\"\r\n";
//Serial.println("=====");
String resp = sendCommand(mycmd, 10000, DEBUG);
//Serial.println(resp.length());
//Serial.println(resp.substring(36,51));
if (resp.substring(36, 51) == "WIFI DISCONNECT") {
  Serial.println("Wifi disconnect...");
  return 0; //false exit
}
//06. TO DISPLAY IP address
Serial.println("Starting to get Local IP address by CIFSR");
// sendCommand("AT+CIFSR\r\n",4000,DEBUG);
sendCommand("AT+CIFSR\r\n", 1000, DEBUG);

//07. TO DISPLAY IP address
Serial.println("Starting to get Local IP address by CIPSTA");
sendCommand("AT+CIPSTA?\r\n", 1000, DEBUG);
return 1; //true exit
}

void reconnect() {

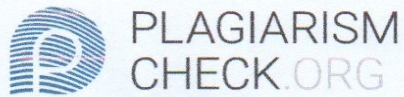
//01. Baudrate Declarations/ DO WE NEED THIS HERE?
Serial.begin(9600); // baudrate komunikasi serial arduino dengan
komputer
wifi.begin(9600); // baudrate komunikasi serial arduino dengan
Esp8266

Serial.println("Starting to reconnect..");

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```
while (connectWithATcommand() == 0) { //Function to connect
wifi with AT command
  Serial.println("Trying to reconnect.....");
};
}
```





0.91% PLAGIARISM APPROXIMATELY

0.15% IN QUOTES

Report #11011164

Introduction Background In this 2020, a lot of theft happened in Indonesia, especially for student or people who lived in boarding house. Because they are not only one who got the key to open another people s room. Because of that, I want to make a prototype to make sure the room in their boarding house is safe. So we can reduce this incident to make people feel safer. In my prototype, I will use Arduino Uno for the base, then use flame sensor and place it over the electric socket and infrared sensor as the sensor to detect the thief. Then I use ESP8266 Module as the Wi-Fi receiver to send data to Thingspeak (www.thingspeak.com). So we can monitor the room everywhere and anytime.

Problem Formulation 1. Can infrared sensor detect the thief? 2. How can we read the data and concluding that the room is safe or not?

Scope This project is about make the security the house or the room at boarding house. The mockup is describing a boarding house s room. The data will send to website called thingspeak. The system for build this project is Arduino IDE Ver 1.8.12

Objective The purpose of this project is making an embedded device to monitor room at boarding house and make sure the room is safe

Literature Study Aloysius Agus Subagyo , S.E., M.Si. proposed a journal titled Sistem monitoring suhu jarak jauh berbasis internet of things menggunakan protokol MQTT [1]. This

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