6.1.2 Appendix

Libraries

#include <SoftwareSerial.h>
#include <espduino.h>
#include <rest.h>
#include <AFMotor.h>

Setting motor dc

AF_DCMotor front_motor(1, MOTOR12_8KHZ);
AF_DCMotor aft_motor(2, MOTOR12_8KHZ);

Setting Wifi

SoftwareSerial espPort(10, 11);
ESP esp(&espPort, &Serial, 9);
REST rest(&esp);
boolean wifiConnected = false;

Declare Variable

const int ledPin = 2;
boolean data1 = false;
int loop_count = 0;

char response[266];
char buff[64];
String strId, strData, strCode;
String strData_Last1;

void(* resetFunc) (void) = 0;

Void WifiCb

void wifiCb(void* response) {
    uint32_t status;
    RESPONSE res(response);
    if(res.getArgc() == 1) {
        res.popArgs((uint8_t*)&status, 4);
        if(status == STATION_GOT_IP) {
            Serial.println("TERHUBUNG KE WIFI");
            wifiConnected = true;
        } else {
            wifiConnected = false;
        }
    }
}

}
Motor set Speed

front_motor.setSpeed(250);
aft_motor.setSpeed(250);

Set Serial begin

Serial.begin(9600);
espPort.begin(19200);

Set ESP8266 start and join WIFI

esp.enable();
delay(500);
esp.reset();
delay(500);
while(!esp.ready());

Serial.println("ARDUINO: Setup client");
if(!rest.begin("api.thingspeak.com")) {
    Serial.println("ARDUINO: Gagal Setup client");
    while(1);
}

Serial.println("ARDUINO: Menghubungkan dengan Wifi");
esp.wifiCb.attach(&wifiCb);
esp.wifiConnect("ssid","password");
Serial.println("ARDUINO: System sudah siap!");
}

GetData from thingspeak

if(wifiConnected) {
    char str_field1[6];
    sprintf(buff, "/channels/288644/fields/1/last");
    Serial.println(buff);
    rest.get((const char*)buff);
    if(rest.getResponse(response, 266) == HTTP_STATUS_OK){
        strId = "";
        strData = "";
        strCode = "";
        getData();
    }

    Translates values into motion of the car

    if (strId == "0" || strId == "+1" || strId == "+0.1" || strId == "+0.10"){
        digitalWrite(ledPin,LOW);
        front_motor.run(RELEASE);
        aft_motor.run(RELEASE);
        data1 = false;
    }
```c
if (strId == "1" || strId == "1.0" || strId == "1.00") {
    digitalWrite(ledPin, HIGH);
    aft_motor.run (FORWARD);
    front_motor.run (RELEASE);
    data1 = true;
}
if (strId == "2" || strId == "2.0" || strId == "2.00") {
    digitalWrite(ledPin, HIGH);
    front_motor.run (FORWARD);
    aft_motor.run (FORWARD);
    data1 = true;
}
if (strId == "3" || strId == "3.0" || strId == "3.00") {
    digitalWrite(ledPin, HIGH);
    front_motor.run (BACKWARD);
    aft_motor.run (FORWARD);
    data1 = true;
}
if (strId == "4" || strId == "4.0" || strId == "4.00") {
    digitalWrite(ledPin, HIGH);
    aft_motor.run (BACKWARD);
    front_motor.run (RELEASE);
    data1 = true;
}
if (strId == "5" || strId == "5.0" || strId == "5.00") {
    digitalWrite(ledPin, HIGH);
    front_motor.run (FORWARD);
    aft_motor.run (BACKWARD);
    data1 = true;
}
if (strId == "6" || strId == "6.0" || strId == "6.00") {
    digitalWrite(ledPin, HIGH);
    aft_motor.run (BACKWARD);
    front_motor.run (BACKWARD);
    data1 = true;
}
}
else{
    //hardReset();
    //resetFunc();
}
loop_count++;
Serial.println("LOOP :");
Serial.println(loop_count);
if (loop_count == 6) {
    loop_count = 0;
}
if (data1) {
    dtostrf(1, 1, 1, str_field1);
```
else{
    dtostrf(0.1, 2, 1, str_field1);
}

    //sprintf(buff, "//update?key=V2TDPB06QSQLY5D8&field1=%s&field2=%s&field3=%s&field4=%s",str_field1,str_field2,str_field3,str_field4);
    //Serial.println(buff);
    //rest.get((const char*)buff);
    //Serial.println("ARDUINO: Mengirim data terbaru");

    //if(rest.getResponse(response, 266) == HTTP_STATUS_OK) {
    //    Serial.println("ARDUINO: Berhasil GET Data");
    //    strId = "; strData = "; strCode = "";
    //    getData();
    //}
    delay(5000);
}

Void GetData()
int i=0,j=0,k=0;

    for (i = 0; i < 10; i++){
        if((response[i] == '\r') || (response[i] == '\n')) {
        }
        else{
            strId += response[i];
        }
        if (response[i] == '\n') {
            i++;
            break;
        }
    }

    Serial.println("\n");
    Serial.print("ID : ");
    Serial.print(strId);

    for (j = i; j < (i+20); j++){
        if((response[j] == '\r') || (response[j] == '\n')) {
        }
        else{
            strData += response[j];
        }
        if (response[j] == '\n') {
            j++;
            break;
        }
    }
Serial.println("\n");
Serial.print("Data : ");
Serial.print(strData);
for (k = j; k < (j+10); k++){
    if((response[k] == '\r') || (response[k] == '\n')) {
    } else{
        strCode += response[k];
    }
}
if (response[k] == '\n'){
    break;
}
Serial.println("\n");
Serial.print("Code : ");
Serial.print(strCode);
Serial.println("\n");
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