

Lampiran 1

Coding pada Arduino mega

```
#include <stdlib.h>

#define SSID "Panel" //nama wifinya

#define PASS "panelsurya" //password wifi routernya

#define Baud_Rate 115200

#define Delay_Time 5000

#define WRITE_APIKEY "OUWL4DGIN4XTGFHF"//channel read apikey

bool kirimdata; //cek status kirim data

#include <EEPROM.h>
int simpandategangan;

////////////////////////////////////
////////////////////////////////////

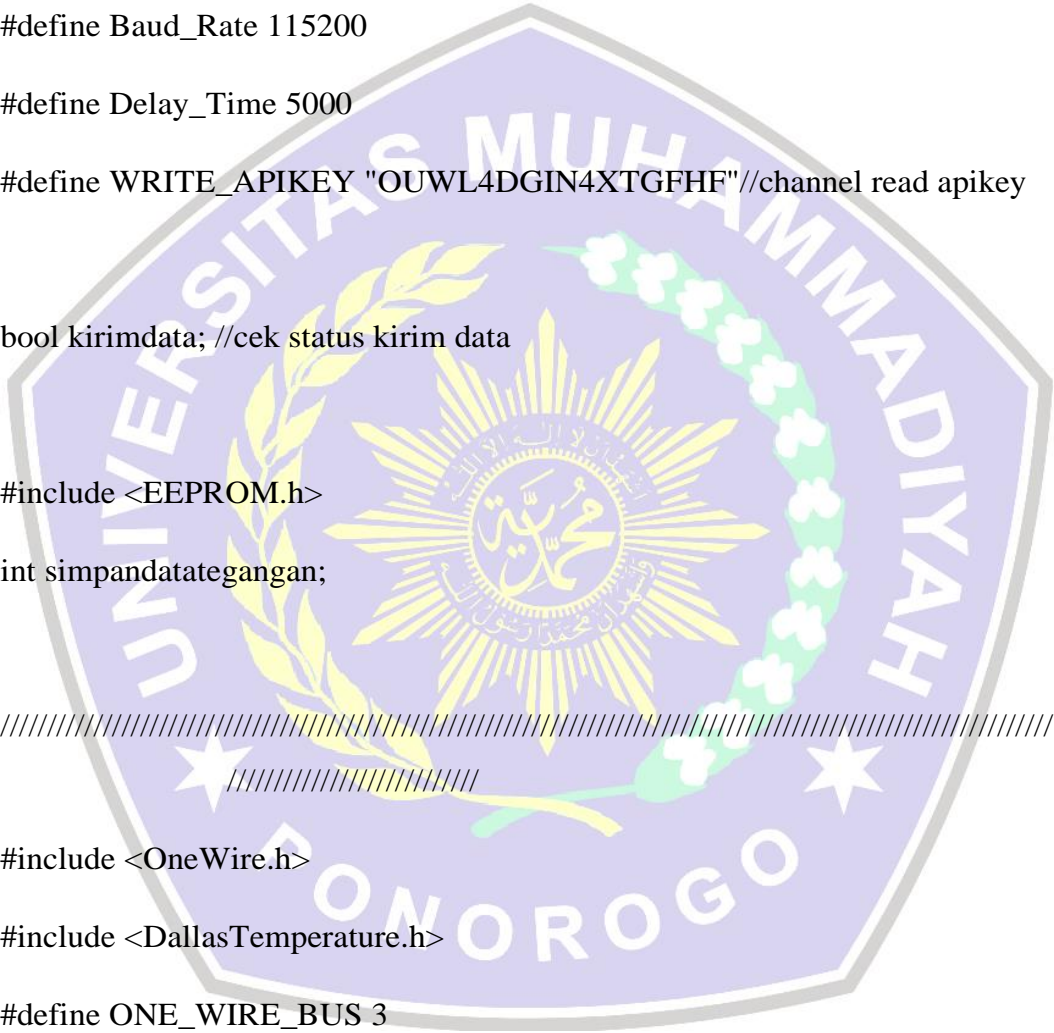
#include <OneWire.h>
#include <DallasTemperature.h>

#define ONE_WIRE_BUS 3

OneWire oneWire(ONE_WIRE_BUS);

DallasTemperature sensors(&oneWire);

////////////////////////////////////
////////////////////////////////////
```



```
float tegangan1;
```

```
int tegangan2;
```

```
////////////////////////////////////  
////////////////////////////////////
```

```
#include "ACS712.h"
```

```
ACS712 sensor1(ACS712_30A, A3);
```

```
float beban;
```

```
float tmbhbeban;
```

```
float dayabeban;
```

```
////////////////////////////////////  
////////////////////////////////////
```

```
int sensorValue = 0;
```

```
int cahaya = 0;
```

```
int charge, pengaman;
```

```
// the setup routine runs once when you press reset:
```

```
void setup() {
```

```
    // initialize serial communication at 9600 bits per second:
```

```
    Serial.begin(115200);
```

```
    sensors.begin();
```



```
sensor1.calibrate();

pinMode(8, OUTPUT);

digitalWrite(8, LOW);

Serial.begin(Baud_Rate);

Serial.println("AT");

delay(5000);

//sambungkan ke wifi
Serial.println("AT+CWMODE=1");//mode wifi client
delay(2000);

String cmd = "AT+CWJAP=\"";//at command konek ke wifi router
cmd += SSID;
cmd += "\",\"";
cmd += PASS;
cmd += "\"";

Serial.println(cmd);

delay(5000);

if(Serial.find("OK")){ }
```

```
else{ }

}

// the loop routine runs over and over again forever:

void loop() {

for (long x=0; x <5000; x++) { // loop selama satu detik ( x counting 1
)

delay(1);

//Serial.println(x);

if (x==500) {digitalWrite(8, HIGH);}

if (x==2000) {

int sensorValue1 = analogRead(A2); // solar

tegangan1=((sensorValue1*0.00489)*5);

Serial.print(" TEGANGAN solar= ");

Serial.println(tegangan1);

}

if (x==2500) {digitalWrite(8, LOW);}

}
```

```
if (x==4000) {

    beban = sensor1.getCurrentDC(); // solar

    Serial.print("arus solar= ");

    Serial.println(beban);

    tmbhbeban=beban*5;

    dayabeban=tegangan1*beban;

    sensors.requestTemperatures();

    sensorValue = analogRead(A0);

    cahaya = map(sensorValue, 0, 1023, 0, 100);

    int sensorValue2 = analogRead(A1);

    //tegangan2=((sensorValue2*0.00489)*5); //438 523

    tegangan2 = map(sensorValue2, 438, 640, 0, 100);

    charge=tegangan2-tmbhbeban;

    pengaman=0.00;

    delay(2000);

}

}
```



```

/*

digitalWrite(8, LOW);

int sensorValue1 = analogRead(A2); // solar

tegangan1=((sensorValue1*0.00489)*5);

beban = sensor1.getCurrentDC(); // solar

Serial.print("arus solar= ");

Serial.println(beban);

tmbhbeban=beban*5;

dayabeban=tegangan1*beban;

sensors.requestTemperatures();

sensorValue = analogRead(A0);

cahaya = map(sensorValue, 0, 1023, 0, 100);

int sensorValue2 = analogRead(A1);

//tegangan2=((sensorValue2*0.00489)*5); //438 523

tegangan2 = map(sensorValue2, 438, 640, 0, 100);

charge=tegangan2-tmbhbeban;

pengaman=0.00;

*/

if(beban<=0.01)

{ //simpan datategangan=EEPROM.read(1);

```

```
Serial.print(" arus solar= ");  
  
Serial.print(pengaman);  
  
Serial.print(" TEGANGAN solar= ");  
  
Serial.print(tegangan1);  
  
Serial.print(" DAYA= ");  
  
Serial.print(pengaman);  
  
Serial.print(" SUHU= ");  
  
Serial.print(sensors.getTempCByIndex(0));  
  
Serial.print(" CAHAYA= ");  
  
Serial.print(cahaya);  
  
Serial.print(" BATERAI= ");  
  
Serial.print(tegangan2);  
  
Serial.println(" ");  
  
delay(500); // delay in between reads for stability  
  
sendingspeak1();  
  
}
```

```
else if(beban>=0.50)
```

```
{
```

```
//simpan datategangan=EEPROM.read(1);
```

```
Serial.print(" arus solar= ");

Serial.print(beban);

Serial.print(" TEGANGAN solar= ");

Serial.print(tegangan1);

Serial.print(" DAYA= ");

Serial.print(dayabeban);

Serial.print(" SUHU= ");

Serial.print(sensors.getTempCByIndex(0));

Serial.print(" CAHAYA= ");

Serial.print(cahaya);

Serial.print(" BATERAI= ");

Serial.print(tegangan2);

Serial.println(" ");

delay(500);    // delay in between reads for stability

sendingspeak2();

}

else if (beban >= 0.07 && beban <= 0.50)

{

//simpan datategangan = EEPROM.read(1);

Serial.print(" arus solar= ");
```



```
Serial.print(beban);

Serial.print(" TEGANGAN solar= ");

Serial.print(tegangan1);

Serial.print(" DAYA= ");

Serial.print(dayabeban);

Serial.print(" SUHU= ");

Serial.print(sensors.getTempCByIndex(0));

Serial.print(" CAHAYA= ");

Serial.print(cahaya);

Serial.print(" BATERAI= ");

Serial.print(charge);

Serial.println(" ");

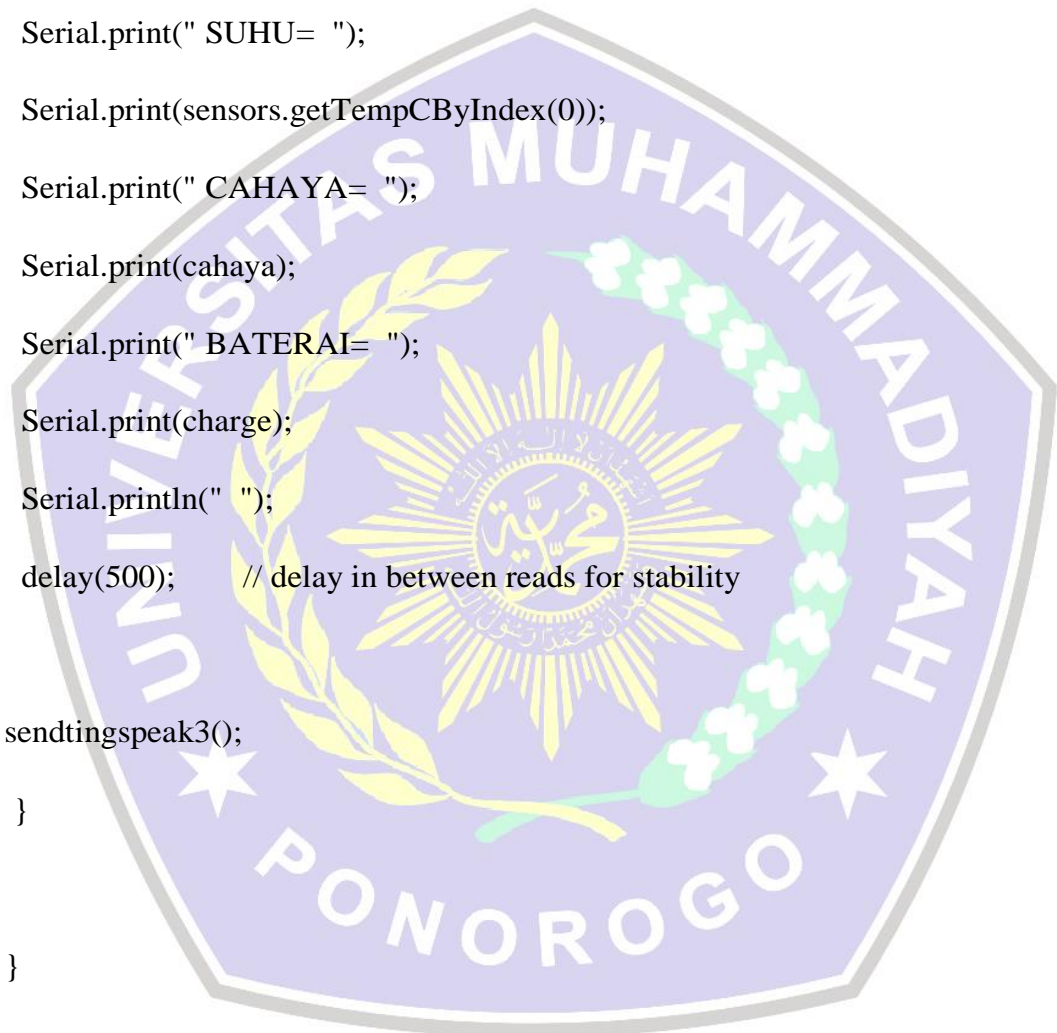
delay(500); // delay in between reads for stability

sendingspeak3();
}

}
```

```
void sendtingspeak1()

{
```



```
String cmd = "AT+CIPSTART=\"TCP\",184.106.153.149,80";//ip
api.thingspeak.com

Serial.println(cmd);

delay(500);

//coba kirim data

String getStr = "GET /update?api_key=";
getStr += WRITE_APIKEY;
getStr += "&field1=";
getStr += pengaman;
getStr += "&field2=";
getStr += tegangan1;
getStr += "&field3=";
getStr += pengaman;
getStr += "&field4=";
getStr += sensors.getTempCByIndex(0);
getStr += "&field5=";
getStr += cahaya;
getStr += "&field6=";

getStr += tegangan2;

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

//Serial.print("AT+CIPSEND=");
```