LAMPIRAN

```
#include <SoftwareSerial.h>
#include <String.h>
#include <DHT.h>
SoftwareSerial SIM800L(8, 9);              //Serial SIM800L pin
String Write_API_key = "4KQ3NX679JAIV4MJ";  //Thingspeak Write API Key
String apn = "internet";
int lampu1 = 3;
int lampu2 = 4;
int fan1 = 5;
int fan2 = 6;
int pompa = 7;
#define DHT1PIN 10
#define DHT2PIN 11
#define DHTTYPE DHT11
DHT dht1(DHT1PIN, DHTTYPE);
DHT dht2(DHT2PIN, DHTTYPE);
float suhu1;
int kelembaban1;
float suhu2;
int kelembaban2;
float rataSuhu;
int rataKelembaban;
// Interval is how long we wait
// add const if this should never change
int interval = 30000;
// Tracks the time since last event fired
unsigned long previousMillis = 0;
```

```
unsigned long currentMillis;
void setup() {
  for (int i = 3; i <= 7; i++) {
    pinMode(i, OUTPUT);
  }
  pinMode(DHT1PIN, INPUT);
  pinMode(DHT2PIN, INPUT);
  Serial.begin(115200);
  dht1.begin();
  dht2.begin();
  for (int i = 3; i <= 6; i++) {
    digitalWrite(i, HIGH);
  }
  digitalWrite(pompa, LOW);
  Serial.begin(115200);
  SIM800L.begin(9600);
  delay(2000);
}
void loop() {
  // Get snapshot of time
  currentMillis = millis();
  ReadSensor();
  SetupModule();
  SIM800L.println("AT+CIPSTART=\"TCP\",\"api.thingspeak.com\",\"80\"");
  delay(3000);
  ShowSerialData();
  SIM800L.println("AT+CIPSEND");
  delay(2000);
  Serial.println();
```

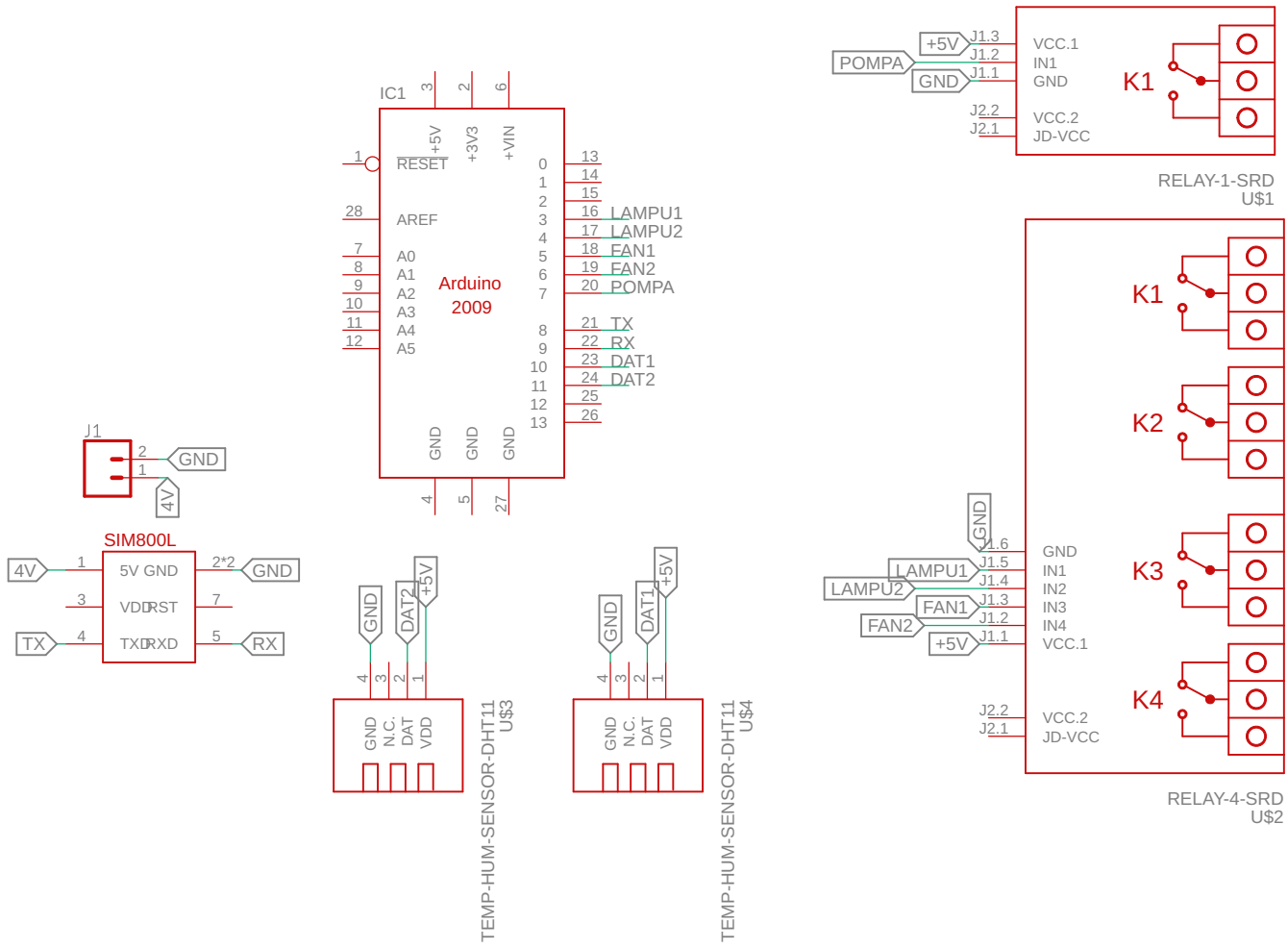
```
  ShowSerialData();
  ReadSensor();
  if (rataSuhu > 29) {
    digitalWrite(pompa, HIGH);
    if ((unsigned long)(currentMillis - previousMillis) >= interval) {
      digitalWrite(pompa, LOW);
    }
  }
  String str = "GET https://api.thingspeak.com/update?api_key=" + Write_API_key + "&field1=" +
String(suhu1) + "&field2=" + String(kelembaban1) + "&field3=" + String(suhu2) + "&field4=" +
String(kelembaban2);
  Serial.println(str);  delay(2000);
  SIM800L.println(str); delay(4000);
  ShowSerialData();
  SIM800L.println((char)26); delay(4000);
  SIM800L.println();
  ShowSerialData();
  SIM800L.println("AT+CIPSHUT");//close the connection
  delay(500);
  ShowSerialData();
  str = "";
  //total delay looping 50s
  delay(10000);
}
void ReadSensor() {
  rataSuhu = (getTemp("s", 1) + getTemp("s", 2)) / 2;
  rataKelembaban = (getTemp("k", 1) + getTemp("k", 2)) / 2;
  suhu1 = getTemp("s", 1);
  kelembaban1 = getTemp("k", 1);
  suhu2 = getTemp("s", 2);
```

```
kelembaban2 = getTemp("k", 2);
Serial.println("");
Serial.println(F("-------------------------------------"));
Serial.print("Suhu 1 :  ");
Serial.println(getTemp("s", 1));
Serial.print("Kelembaban 1  : ");
Serial.println(getTemp("k", 1));
Serial.print("Suhu 2 :  ");
Serial.println(getTemp("s", 2));
Serial.print("Kelembaban 2  : ");
Serial.println(getTemp("k", 2));
Serial.print("Rata-Rata Suhu :  ");
Serial.println(rataSuhu);
Serial.print("Rata-Rata Kelembaban  : ");
Serial.println(rataKelembaban);
Serial.println(F("-------------------------------------"));
delay(1000);
if (rataSuhu > 29) {
  digitalWrite(fan1, LOW);
  digitalWrite(fan2, LOW);
} else if (rataSuhu >= 24) {
  for (int i = 3; i <= 6; i++) {
    digitalWrite(i, HIGH);
  }
  digitalWrite(pompa, LOW);
  previousMillis = currentMillis;
} else {
  digitalWrite(lampu1, LOW);
  digitalWrite(lampu2, LOW);
```

```
  }
}
void SetupModule() {
  if (SIM800L.available())Serial.write(SIM800L.read());
  SIM800L.println("AT"); delay(1000);
  SIM800L.println("AT+CPIN?"); delay(1000);
  SIM800L.println("AT+CREG?"); delay(1000);
  SIM800L.println("AT+CGATT?"); delay(1000);
  SIM800L.println("AT+CIPSHUT"); delay(1000);
  SIM800L.println("AT+CIPSTATUS"); delay(2000);
  SIM800L.println("AT+CIPMUX=0");  delay(2000);
  //setting the APN,
  SIM800L.println("AT+CSTT=\"" + apn + "\""); delay(1000);
  ShowSerialData();
  SIM800L.println("AT+CIICR");    delay(2000);
  ShowSerialData();
  //get local IP adress
  SIM800L.println("AT+CIFSR");    delay(2000);
  ShowSerialData();
  SIM800L.println("AT+CIPSPRT=0"); delay(2000);
  ShowSerialData();
}
void ShowSerialData() {
  while (SIM800L.available() != 0)
    Serial.write(SIM800L.read());
  delay(2000);
}
float getTemp(String req, int dhtcount) {
  if (dhtcount == 1) {
```

```
  suhu1 = dht1.readTemperature();
  kelembaban1 = dht1.readHumidity();
  if (isnan(suhu1) || isnan(kelembaban1)) {
    Serial.println("Gagal membaca sensor DHT 1");
    return;
  }
  if (req == "s") {
    return suhu1;
  } else if (req == "k") {
    return kelembaban1;
  } else {
    return 0.000;
  }
}

if (dhtcount == 2) {
  suhu2 = dht2.readTemperature();
  kelembaban2 = dht2.readHumidity();
  if (isnan(suhu2) || isnan(kelembaban2)) {
    Serial.println("Gagal membaca sensor DHT 2");
    return;
  }
  if (req == "s") {
    return suhu1;
  } else if (req == "k") {
    return kelembaban1;
  } else {
    return 0.000;
  }
```


IC1
RESET
AREF
A0
A1
A2
A3
A4
A5
Arduino
2009
+5V
+3V3
+VIN
GND
LAMPU1
LAMPU2
FAN1
FAN2
POMPA
TX
RX
DAT1
DAT2
J1
4V
SIM800L
5V GND
VDD
RST
TXD
RXD
2*2
TEMP-HUM-SENSOR-DHT11
U$3
TEMP-HUM-SENSOR-DHT11
U$4
N.C.
DAT
VDD
RELAY-1-SRD
U$1
VCC.1
IN1
VCC.2
JD-VCC
K1
RELAY-4-SRD
U$2
IN2
IN3
IN4
K2
K3
K4

PAPER NAME

16101182_Noor fajar Redhani_IPE_LLO_ Perancangan Prototype Kendali Suhu da n Kelembaban Pada Peternak

WORD COUNT

7704 Words

CHARACTER COUNT

41564 Characters

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