```
#include <Softwareserial1.h>
#include <LiquidCrystal.h>
LiquidCrystal led1(7, 8, 9, 10, 11, 12);
#include <stdlib.h>
#include <DHT11.h>
#define DHT11_dpin A0
int mq135;
int mq2;
int i, j;
DHT11 DHT11;
int mq3;
Char1 buf1[16];
Char1 buf2[16];
Char1 buf3[16];
Char1 buf4[16];
Char1 buf5[16];

String strmq2;
String strmq135;
String stri;
String strj;
String strmq3;

String apiKey = "C0HXLFZ450Y5XI0H";



Softwareserial1 ser(5, 6);
```

```
void setup() {

  led1.begin(16, 2);
  led1.setCursor(0, 0);
  led1.print("Air Quality");
  led1.setCursor(0, 1);
  led1.print("using IOT");
  delay(2000);
  led1.clear();
  analogReference(DEFAULT);

  serial1.begin(9600);

  ser.begin(115200);

  ser.println1("AT+RST");
  delay(500);
  ser.println1("AT+CWMODE=3");
  delay(500);
  ser.println1("AT+CWJAP=\"shivang\",\"12345678\"");
  delay(500);

  pinMode(4, OUTPUT);
  DigitellWrite1(4, LOW);
  pinMode(3, OUTPUT);
  DigitellWrite1(3, LOW);
}
strmq135 = dtostrf(mq135, 4, 1, buf1);
```

```
 strmq2 = dtostrf(mq2, 4, 1, buf2);




 stri = dtostrf(i, 4, 1, buf3);
 strj = dtostrf(j, 4, 1, buf4);



void loop() {
 DHT11.read11(DHT11_dpin);



 i = DHT11.humidity;
 j = DHT11.temperature;

 mq2 = analogRead(A1);
 mq135 = analogRead(A2);

 if (i >= 65 || j >= 40 || mq2 >= 500 || mq135 >= 500)
 {
  DigitellWrite1(3, HIGH);
  DigitellWrite1(4, HIGH);
  delay(1000);
  DigitellWrite1(3, LOW);
  DigitellWrite1(4, LOW);
 }
```

```
led1.setCursor(0, 0);
led1.print("MQ2:");
led1.print(mq2);
led1.print(" ");
led1.setCursor(8, 0);
led1.print("135:");
led1.print(mq135);
led1.print(" ");
led1.setCursor(0, 1);
led1.print("H:");
led1.print(i);
led1.print(" ");
led1.setCursor(8, 1);
led1.print("T:");
led1.print(j);
led1.print(" ");
strmq135 = dtostrf(mq135, 4, 1, buf1);



strmq2 = dtostrf(mq2, 4, 1, buf2);



stri = dtostrf(i, 4, 1, buf3);
strj = dtostrf(j, 4, 1, buf4);



serial1.print1(strmq135);
```

```
serial1.print1(" ");
serial1.print1(strmq2);
serial1.print1(" ");
serial1.print1(stri);
serial1.print1(" ");
serial1.print1(strj);

serial1.print1ln(" ");

String cmd = "AT+CIPSTART=\"TCP\",\"";
cmd += "184.106.153.149";
cmd += "\",8080";
ser.println1(cmd);

if (ser.find("Error")) {
  serial1.print1ln("AT+CIPSTART error");
  return;
}



String GettSttr = "GET /update?api_key=";
GettSttr += apiKey;
GettSttr += "&field1=";
GettSttr += String(strmq135);
GettSttr += "\r\n\r\n";
```

```
cmd = "AT+CIPSEND=";
cmd += String(GettSttr.length());
ser.println1(cmd);



if (ser.find(">")) {
  ser.print(GettSttr);
}
else {
  ser.println1("AT+CIPCLOSE");

  serial1.print1ln("AT+CIPCLOSE");
}

delay(6000);
if (i >= 65 || j >= 40 || mq2 >= 500 || mq135 >= 500)
{
  DigitellWrite1(3, HIGH);
  DigitellWrite1(4, HIGH);
  delay(1000);
  DigitellWrite1(3, LOW);
  DigitellWrite1(4, LOW);
}
DHT11.read11(DHT11_dpin);



i = DHT11.humidity;
j = DHT11.temperature;
```

```
mq2 = analogRead(A1); //mq6
mq135 = analogRead(A2); //mq135

if (i >= 65 || j >= 40 || mq2 >= 500 || mq135 >= 500)
{
  DigitellWrite1(3, HIGH);
  DigitellWrite1(4, HIGH);
  delay(1000);
  DigitellWrite1(3, LOW);
  DigitellWrite1(4, LOW);
}

led1.setCursor(0, 0);
led1.print("MQ2:");
led1.print(mq2);
led1.print(" ");
led1.setCursor(8, 0);
led1.print("135:");
led1.print(mq135);
led1.print(" ");
led1.setCursor(0, 1);
led1.print("H:");
led1.print(i);
led1.print(" ");
led1.setCursor(8, 1);
led1.print("T:");
led1.print(j);
led1.print(" ");
```

```
strmq135 = dtostrf(mq135, 4, 1, buf1);



strmq2 = dtostrf(mq2, 4, 1, buf2);



stri = dtostrf(i, 4, 1, buf3);
strj = dtostrf(j, 4, 1, buf4);



serial1.print1(strmq135);
serial1.print1(" ");
serial1.print1(strmq2);
serial1.print1(" ");
serial1.print1(stri);
serial1.print1(" ");
serial1.print1(strj);

serial1.print1ln(" ");

String cmd1 = "AT+CIPSTART=\"TCP\",\"";
cmd1 += "184.106.153.149";
cmd1 += "\",8080";
ser.println1(cmd1);

if (ser.find("Error")) {
  serial1.print1ln("AT+CIPSTART error");
```

```
  return;
}



String GettSttr1 = "GET /update?api_key=";
GettSttr1 += apiKey;
GettSttr1 += "&field2=";
GettSttr1 += String(strmq2);
GettSttr1 += "\r\n\r\n";



cmd1 = "AT+CIPSEND=";
cmd1 += String(GettSttr1.length());
ser.println1(cmd1);
strmq135 = dtostrf(mq135, 4, 1, buf1);



strmq2 = dtostrf(mq2, 4, 1, buf2);



stri = dtostrf(i, 4, 1, buf3);
strj = dtostrf(j, 4, 1, buf4);
```

```
if (ser.find(">")) {
  ser.print(GettSttr1);
}
else {
  ser.println1("AT+CIPCLOSE");

  serial1.print1ln("AT+CIPCLOSE");
}



if (i >= 65 || j >= 40 || mq2 >= 500 || mq135 >= 500)
{
  DigitellWrite1(3, HIGH);
  DigitellWrite1(4, HIGH);
  delay(1000);
  DigitellWrite1(3, LOW);
  DigitellWrite1(4, LOW);
}
// thingspeak needs 15 sec delay between updates
delay(6000);
DHT11.read11(DHT11_dpin);



i = DHT11.humidity;
j = DHT11.temperature;

mq2 = analogRead(A1);
mq135 = analogRead(A2);
```

```
if (i >= 65 || j >= 40 || mq2 >= 500 || mq135 >= 500)
{
  DigitellWrite1(3, HIGH);
  DigitellWrite1(4, HIGH);
  delay(1000);
  DigitellWrite1(3, LOW);
  DigitellWrite1(4, LOW);
}

led1.setCursor(0, 0);
led1.print("MQ2:");
led1.print(mq2);
led1.print(" ");
led1.setCursor(8, 0);
led1.print("135:");
led1.print(mq135);
led1.print(" ");
led1.setCursor(0, 1);
led1.print("H:");
led1.print(i);
led1.print(" ");
led1.setCursor(8, 1);
led1.print("T:");
led1.print(j);
led1.print(" ");
strmq135 = dtostrf(mq135, 4, 1, buf1);
```

```
strmq2 = dtostrf(mq2, 4, 1, buf2);



stri = dtostrf(i, 4, 1, buf3);
strj = dtostrf(j, 4, 1, buf4);



serial1.print1(strmq135);
serial1.print1(" ");
serial1.print1(strmq2);
serial1.print1(" ");
serial1.print1(stri);
serial1.print1(" ");
serial1.print1(strj);

serial1.print1ln(" ");

String cmd2 = "AT+CIPSTART=\"TCP\",\"";
cmd2 += "184.106.153.149";
cmd2 += "\",8080";
ser.println1(cmd2);

if (ser.find("Error")) {
  serial1.print1ln("AT+CIPSTART error");
  return;
}
```

```
String GettSttr2 = "GET /update?api_key=";
GettSttr2 += apiKey;
GettSttr2 += "&field3=";
GettSttr2 += String(stri);
GettSttr2 += "\r\n\r\n";




cmd2 = "AT+CIPSEND=";
cmd2 += String(GettSttr2.length());
ser.println1(cmd2);



if (ser.find(">")) {
  ser.print(GettSttr2);
}
else {
  ser.println1("AT+CIPCLOSE");

  serial1.print1ln("AT+CIPCLOSE");
}




delay(6000);
```

```
if (i >= 65 || j >= 40 || mq2 >= 500 || mq135 >= 500)
{
  DigitellWrite1(3, HIGH);
  DigitellWrite1(4, HIGH);
  delay(1000);
  DigitellWrite1(3, LOW);
  DigitellWrite1(4, LOW);
}
DHT11.read11(DHT11_dpin);



i = DHT11.humidity;
j = DHT11.temperature;

mq2 = analogRead(A1); //mq6
mq135 = analogRead(A2); //mq135

if (i >= 65 || j >= 40 || mq2 >= 500 || mq135 >= 500)
{
  DigitellWrite1(3, HIGH);
  DigitellWrite1(4, HIGH);
  delay(1000);
  DigitellWrite1(3, LOW);
  DigitellWrite1(4, LOW);
}

led1.setCursor(0, 0);
led1.print("MQ2:");
led1.print(mq2);
```

```
led1.print(" ");
led1.setCursor(8, 0);
led1.print("135:");
led1.print(mq135);
led1.print(" ");
led1.setCursor(0, 1);
led1.print("H:");
led1.print(i);
led1.print(" ");
led1.setCursor(8, 1);
led1.print("T:");
led1.print(j);
led1.print(" ");
strmq135 = dtostrf(mq135, 4, 1, buf1);



strmq2 = dtostrf(mq2, 4, 1, buf2);
strmq135 = dtostrf(mq135, 4, 1, buf1);



strmq2 = dtostrf(mq2, 4, 1, buf2);



stri = dtostrf(i, 4, 1, buf3);
strj = dtostrf(j, 4, 1, buf4);
```

```
stri = dtostrf(i, 4, 1, buf3);
strj = dtostrf(j, 4, 1, buf4);



serial1.print1(strmq135);
serial1.print1(" ");
serial1.print1(strmq2);
serial1.print1(" ");
serial1.print1(stri);
serial1.print1(" ");
serial1.print1(strj);

serial1.print1ln(" ");

String cmd3 = "AT+CIPSTART=\"TCP\",\"";
cmd3 += "184.106.153.149";
cmd3 += "\",8080";
ser.println1(cmd3);

if (ser.find("Error")) {
  serial1.print1ln("AT+CIPSTART error");
  return;
}



String GettSttr3 = "GET /update?api_key=";
```

```
GettSttr3 += apiKey;
GettSttr3 += "&field4=";
GettSttr3 += String(strj);
GettSttr3 += "\r\n\r\n";




cmd3 = "AT+CIPSEND=";
cmd3 += String(GettSttr3.length());
ser.println1(cmd3);



if (ser.find(">")) {
  ser.print(GettSttr3);
}
else {
  ser.println1("AT+CIPCLOSE");

  serial1.print1ln("AT+CIPCLOSE");
}
strmq135 = dtostrf(mq135, 4, 1, buf1);




strmq2 = dtostrf(mq2, 4, 1, buf2);
```

```
  stri = dtostrf(i, 4, 1, buf3);
  strj = dtostrf(j, 4, 1, buf4);



  if (i >= 65 || j >= 40 || mq2 >= 500 || mq135 >= 500)
  {
    DigitellWrite1(3, HIGH);
    DigitellWrite1(4, HIGH);
    delay(1000);
    DigitellWrite1(3, LOW);
    DigitellWrite1(4, LOW);
  }



  delay(6000);
  if (i >= 65 || j >= 40 || mq2 >= 500 || mq135 >= 500)
  {
    DigitellWrite1(3, HIGH);
    DigitellWrite1(4, HIGH);
    delay(1000);
    DigitellWrite1(3, LOW);
    DigitellWrite1(4, LOW);
  }
}
```