Lampiran 1

```
#include <SoftwareSerial.h>
#include <LiquidCrystal.h>
LiquidCrystal lcd(8, 9, 4, 5, 6, 7);
SoftwareSerial espSerial = SoftwareSerial(2,3);

//chanel ID=540828
String apiKey = "TF2YYZYRULRWOB6P";
String ssid = "THINGSPEAK";
String password = "NEHRU_45";
boolean DEBUG=true;

#define pintriger A1
#define pinecho A2
long durasi, jarak;
int pinsirine=A0;
int warning=0;
int i;
//====================== SHOW RESPON
============================
void showResponse(int waitTime){
 long t=millis();
 char c;
 while (t+waitTime>millis()){
  if(espSerial.available()){
   c = espSerial.read();
   if(DEBUG) Serial.print(c);
  }
 }
}

void Response(int waitTime){
 long t=millis();
 char c;
 while (t+waitTime>millis()){
  if(espSerial.available()){
   c = espSerial.read();
   if(DEBUG) lcd.print(c);
  }
 }
}
//====================kirim data sensor to
thingspeak.com=====================================
boolean thingSpeakWrite(){
//long randNumber;
//int a=0;
```

```
//randNumber  = random(500);
char buf[16];
itoa(jarak,buf,10);

String cmd = "AT+CIPSTART=\"TCP\",\"";
cmd += "184.106.153.149"; // ip untuk thingspeak.com
cmd += "\",80";
espSerial.println(cmd);
showResponse(1000);

if(DEBUG)Serial.println(cmd);
if(espSerial.find("Error")){
  if(DEBUG)Serial.println("AT+CIPSTART error");
  return false;
}

//send data
String getStr = "GET /update?api_key=";
getStr += apiKey;
getStr += "&field1=";
getStr += buf;
getStr += "\r\n\r\n";

cmd = "AT+CIPSEND=";
cmd += String(getStr.length());
espSerial.println(cmd);
showResponse(1000);
espSerial.print(getStr);
if(DEBUG)Serial.print(getStr);
//if(DEBUG)Serial.println(cmd);
//delay(1000);
if(espSerial.find(">")){
  espSerial.print(getStr);
  if(DEBUG)Serial.print(getStr);
}else{
  espSerial.println("AT+CIPCLOSE");
  if(DEBUG)Serial.println("AT+CIPCLOSE");
  return false;
}
return true;
}

void setup() {
pinMode(pinsirine, OUTPUT);
digitalWrite(pinsirine,LOW);

DEBUG = true;
```

```
Serial.begin(9600);
espSerial.begin(115200);
lcd.begin(16, 2);
 // put your setup code here, to run once:
lcd.setCursor(0,0);
lcd.print("Internet WiFi: ");

espSerial.println("AT");
showResponse(1000);

espSerial.println("AT+GMR");
showResponse(1000);

espSerial.println("AT+RST");
showResponse(1000);

//espSerial.println("AT+CIOBAUD=115200");
//showResponse(1000);

espSerial.println("AT+CWMODE=1");
showResponse(1000);

espSerial.println("AT+CWJAP=\""+ssid+"\",\""+password+"\"");
showResponse(1000);
if(espSerial.find("ERROR")){
 Serial.println("AT+CWJAP error");
}

if(DEBUG)Serial.println("Setup completed");

espSerial.println("AT+CIPMUX=0");
Response(1000);
if(espSerial.find("Error")){
 Serial.println("AT+CIPMUX error");
}
espSerial.println("AT+CIPMUX=0");
showResponse(1000);
if(espSerial.find("Error")){
 Serial.println("AT+CIPMUX error");
}
pinMode(pintriger, OUTPUT);
pinMode(pinecho, INPUT);
lcd.clear();
lcd.setCursor(0,0);
lcd.println("Detector Banjir ");
}
```

```
void banjir(){
lcd.setCursor(0,0);
lcd.println("HARAP   MENGUNGSI");
digitalWrite(pinsirine,HIGH);
}

void waspada(){
lcd.setCursor(0,0);
lcd.println(" WASPADA BANJIR ");
}

void normal(){
lcd.setCursor(0,0);
lcd.println(" SUNGAI NORMAL  ");
}

//kalirasi sensor
void sensor(){
 digitalWrite(pintriger, LOW);
 delayMicroseconds(2);
 digitalWrite(pintriger, HIGH);
 delayMicroseconds(10);
 digitalWrite(pintriger, LOW);

 durasi = pulseIn(pinecho, HIGH);
 jarak = (durasi/2)/30;

 Serial.println(jarak);
   lcd.setCursor(0,1);
   lcd.println("Jarak: ");
   lcd.setCursor(7,1);
   lcd.print(jarak);
   lcd.print("cm  ");
   delay(500);

 if(jarak>=8){normal();digitalWrite(pinsirine,LOW);}  //SIRINE off

if((jarak>=5)&&(jarak<=7)){waspada();digitalWrite(pinsirine,HIGH);delay(2000
);digitalWrite(pinsirine,LOW);delay(2000);}
 if(jarak<=4){banjir();digitalWrite(pinsirine,HIGH);}  //SIRINE AKTIF
}

void sensor_loop(){
sensor();
sensor();
sensor();
sensor();
```

```
sensor();
sensor();
sensor();
sensor();
}

void loop() {
  // put your main code here, to run repeatedly:
sensor_loop();
sensor_loop();
sensor_loop();
thingSpeakWrite();
delay(1000);
//delay(15000);
}
```