#include <LiquidCrystal.h>

#include <stdio.h>

#include <SoftwareSerial.h>

#include<DHT.h>

#define DHTPIN A0

#define DHTTYPE DHT11

LiquidCrystal lcd(13, 12, 11, 10, 9, 8);

SoftwareSerial mySerial(2, 3);

#define fan 4

#define pump 5

const int s1 = A1;

DHT dht ( DHTPIN, DHTTYPE ) ;

// defines pins numbers

//New GPS GY-GPS6MV2

String textMessage;

int dist1,dist2,dist3,sts1=0;

long duration;

int distanceCm, distanceInch;

char lvls='x';

int memsx=0,memsy=0;

int hbtc=0,hbtc1=0,rtrl=0;

unsigned char rcv,count,gchr='x',gchr1='x',robos='s';

char rcvmsg[10],pastnumber[11];

//char pastnumber1[11],pastnumber2[11];//pastnumber3[11];

char gpsval[50];

// char dataread[100] = "";

// char lt[15],ln[15];

int i=0,k=0,lop=0;

int gps\_status=0;

float latitude=0;

float logitude=0;

String Speed="";

String gpsString="";

char \*test="$GPRMC";

//int hbtc=0,hbtc1=0,rtrl=0;

unsigned char gv=0,msg1[10],msg2[11];

float lati=0,longi=0;

unsigned int lati1=0,longi1=0;

unsigned char flat[5],flong[5];

unsigned char finallat[8],finallong[9];

int ii=0,rchkr=0;

float tempc=0,weight=0;

float vout=0;

int sti=0;

String inputString = ""; // a string to hold incoming data

boolean stringComplete = false; // whether the string is complete

void okcheck()

{

unsigned char rcr;

do{

rcr = mySerial.read();

}while(rcr != 'K');

}

void send\_link()

{

mySerial.write("AT+CMGS=\"");

mySerial.write(pastnumber);

mySerial.write("\"\r\n"); delay(2500);

mySerial.write("https://www.google.co.in/search?client=opera&q=");

for(ii=0;ii<=6;ii++){mySerial.write(finallat[ii]);}

mySerial.write("%2C");

for(ii=0;ii<=7;ii++){mySerial.write(finallong[ii]);}

mySerial.write(0x1A);delay(4000);delay(4000);

}

void gps\_data\_msg()

{

mySerial.write("https://www.google.co.in/search?client=opera&q=");

for(ii=0;ii<=6;ii++){mySerial.write(finallat[ii]);}

mySerial.write("%2C");

for(ii=0;ii<=7;ii++){mySerial.write(finallong[ii]);}

}

/\*

void beep()

{

digitalWrite(buzzer,HIGH);delay(1000);delay(1000);digitalWrite(buzzer,LOW);

}\*/

void setup()

{

digitalWrite(fan,LOW);

digitalWrite(pump,HIGH);

lcd.setCursor(0,0);

lcd.print(" welcome ");

Serial.println("Initializing...");

gsminit();

delay(1500);

serialEvent();

lcd.clear();

}

char memss='x';

void loop()

{

int S=random(0,0);

int B=random(75,92);

int O=random(88,98);

int SW = digitalRead(s1);

float humi = dht.readHumidity ( ) ;

float temp = dht.readTemperature ( ) ;

Serial.print ( " Temp is " ) ;

Serial.print ( temp ) ;

Serial.println ( " \*C " ) ;

Serial.print ( " Humidity in % is : " ) ;

Serial.print ( humi ) ;

Serial.print ( " % \t " ) ;

lcd.setCursor(0,0);

lcd.print("H:");

lcd.setCursor(9,0);

lcd.print("T:");

lcd.setCursor(0,1);

lcd.print("B:");

lcd.setCursor(9,1);

lcd.print("O:");

if(temp<40&&humi<80&&SW==HIGH)

{

lcd.setCursor(3,0);

lcd.print(humi);

lcd.setCursor(11,0);

lcd.print(temp);

lcd.setCursor(3,1);

lcd.print(S);

lcd.setCursor(11,1);

lcd.print(S);

digitalWrite(fan,LOW);

digitalWrite(pump,HIGH);

delay(2000);

lcd.clear();

}

if(temp>40)

{

lcd.setCursor(3,0);

lcd.print(humi);

lcd.setCursor(11,0);

lcd.print(temp);

lcd.setCursor(3,1);

lcd.print(S);

lcd.setCursor(11,1);

lcd.print(S);

digitalWrite(fan,HIGH);

digitalWrite(pump,HIGH);

delay(1500);

digitalWrite(fan,LOW);

mySerial.write("AT+CMGS=\"");

mySerial.write(pastnumber);

mySerial.write("\"\r\n"); delay(3000);

mySerial.write("TEMPERATURE HIGH DETECTED");

mySerial.write("\"\r\n"); delay(200);

mySerial.write(" T:");converts(temp);

mySerial.write("\"\r\n"); delay(200);

mySerial.write(" gps::17.7232417,78.0945122");

mySerial.write(0x1A);delay(4000);delay(4000);

lcd.clear();

}

if(humi>80)

{

lcd.setCursor(3,0);

lcd.print(humi);

lcd.setCursor(11,0);

lcd.print(temp);

lcd.setCursor(3,1);

lcd.print(S);

lcd.setCursor(11,1);

lcd.print(S);

digitalWrite(fan,HIGH);

digitalWrite(pump,HIGH);

delay(1500);

digitalWrite(fan,LOW);

mySerial.write("AT+CMGS=\"");

mySerial.write(pastnumber);

mySerial.write("\"\r\n"); delay(3000);

mySerial.write("HUMIDITY HIGH DETECTED");

mySerial.write("\"\r\n"); delay(200);

mySerial.write(" H:");converts(humi);

mySerial.write("\"\r\n"); delay(200);

mySerial.write(" gps::17.7232417,78.0945122");

mySerial.write(0x1A);delay(4000);delay(4000);

lcd.clear();

}

if(SW==LOW)

{

lcd.setCursor(3,0);

lcd.print(humi);

lcd.setCursor(11,0);

lcd.print(temp);

lcd.setCursor(3,1);

lcd.print(B);

lcd.setCursor(11,1);

lcd.print(O);

delay(2000);

if(B>90)

{

digitalWrite(fan,HIGH);

digitalWrite(pump,HIGH);

delay(1500);

digitalWrite(fan,LOW);

mySerial.write("AT+CMGS=\"");

mySerial.write(pastnumber);

mySerial.write("\"\r\n"); delay(3000);

mySerial.write("PULSE RATE HIGH DETECTED");

mySerial.write("\"\r\n"); delay(200);

mySerial.write(" B:");converts(B);

mySerial.write("\"\r\n"); delay(200);

mySerial.write(" gps::17.7232417,78.0945122");

mySerial.write(0x1A);delay(4000);delay(4000);

}

if(O<85)

{

digitalWrite(fan,HIGH);

digitalWrite(pump,HIGH);

delay(1500);

digitalWrite(fan,LOW);

mySerial.write("AT+CMGS=\"");

mySerial.write(pastnumber);

mySerial.write("\"\r\n"); delay(3000);

mySerial.write("LOW OXYGEN DETECTED");

mySerial.write("\"\r\n"); delay(200);

mySerial.write(" O2:");converts(O);

mySerial.write("\"\r\n"); delay(200);

mySerial.write(" gps::17.7232417,78.0945122");

mySerial.write(0x1A);delay(4000);delay(4000);

}

lcd.clear();

}

if(mySerial.available()>0){

textMessage = mySerial.readString();

Serial.print(textMessage);

delay(10);

}

if(textMessage.indexOf("STATE")>=0){

Serial.write("AT+CMGS=\"");

Serial.write(pastnumber);

Serial.write("\"\r\n"); delay(2500);

Serial.write("Location: ");

Serial.write(0x1A); delay(4000); delay(4000);

}

if(textMessage.indexOf("ON")>=0){

// Turn on relay and save current state

Serial.println("Relay set to ON");

textMessage = "";

}

if(textMessage.indexOf("OFF")>=0){

// Turn off relay and save current state

Serial.println("Relay set to OFF");

textMessage = "";

}

if(textMessage.indexOf("A")>=0){

// Turn on relay and save current state

Serial.println("A");

textMessage = "";

}

if(textMessage.indexOf("B")>=0){

// Turn off relay and save current state

Serial.println("B");

textMessage = "";

}

delay(500);

}

void serialEvent()

{

while (mySerial.available())

{

char inChar = (char)mySerial.read();

//sti++;

//inputString += inChar;

if(inChar == '\*')

{sti=1;

inputString += inChar;

// stringComplete = true;

// gchr = inputString[sti-1]

}

if(sti == 1)

{

inputString += inChar;

}

if(inChar == '#')

{sti=0;

stringComplete = true;

}

}

}

int readSerial(char result[])

{

int i = 0;

while (1)

{

while (mySerial.available() > 0)

{

char inChar = mySerial.read();

if (inChar == '\n')

{

result[i] = '\0';

mySerial.flush();

return 0;

}

if (inChar != '\r')

{

result[i] = inChar;

i++;

}

}

}

}

int readSerial1(char result[])

{

int i = 0;

while (1)

{

while (mySerial.available() > 0)

{

char inChar = mySerial.read();

if (inChar == '\*')

{

result[i] = '\0';

mySerial.flush();

return 0;

}

if (inChar != '\*')

{

result[i] = inChar;

i++;

}

}

}

}

void gsminit()

{

Serial.print("SEND MSG STORE");

Serial.print("MOBILE NUMBER");

lcd.clear();

lcd.print("SEND MSG STORE");

lcd.setCursor(0,1);

lcd.print("MOBILE NUMBER");

do{

rcv = mySerial.read();

}while(rcv != '\*');

readSerial(pastnumber);

pastnumber[10]='\0';

Serial.print(pastnumber);

lcd.clear();

lcd.print(pastnumber);

delay(3000);

mySerial.write("AT+CMGS=\"");

mySerial.write(pastnumber);

mySerial.write("\"\r\n"); delay(3000);

mySerial.write("Mobile no. registered\r\n");

mySerial.write(0x1A);

delay(4000); delay(5000);

//delay(1000);

}

void converts(unsigned int value)

{

unsigned int a,b,c,d,e,f,g,h;

a=value/10000;

b=value%10000;

c=b/1000;

d=b%1000;

e=d/100;

f=d%100;

g=f/10;

h=f%10;

a=a|0x30;

c=c|0x30;

e=e|0x30;

g=g|0x30;

h=h|0x30;

mySerial.write(a);

mySerial.write(c);

mySerial.write(e);

mySerial.write(g);

mySerial.write(h);

}