#include <LiquidCrystal\_I2C.h>

#include <Wire.h>

#include <Keypad.h>

#include <Key.h>

#include <SoftwareSerial.h>

//declarare buzzer

#define buzzer 11

//declarare senzor ultrasonic

#define trigPin 13

#define echoPin 12

//declarare keypad

const byte rows = 4;

const byte cols = 3;

char keypadMap[rows][cols] = {

{'1', '2', '3'},

{'4', '5', '6'},

{'7', '8', '9'},

{'\*', '0', '#'}

};

char keyPressed;

byte rowPins[rows] = {9, 8, 7, 6};

byte colPins[cols] = {5, 4, 3};

Keypad keypad = Keypad(makeKeymap(keypadMap), rowPins, colPins, rows, cols);

//declarare lcd

LiquidCrystal\_I2C lcd(0x27, 16, 2);

//distanta

long microsec;

int distance = 0;

int initialDistance = 10;

int currentDistance = 0;

String password = "";

String tempPassword = "";

boolean activated = true;

boolean activateAlarm = false;

boolean alarmActivated = false;

boolean enteredPassword = true;

boolean passwordChange = true;

int i = 0;

//pentru modul gsm

SoftwareSerial mySerial(10, 2);// tx si rx

void setup(){

//initializare lcd

lcd.init();

lcd.backlight();

//setare buzzer, trigPin, echoPin ca iesire

pinMode(buzzer, OUTPUT);

pinMode(trigPin, OUTPUT);

pinMode(echoPin, INPUT);

//comunicare seriala arduino si modul

Serial.begin(9600);

mySerial.begin(9600);

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

// delay(1000);

// mySerial.println("AT");

// updateSerial();

// mySerial.println("AT+CMGF=1");

// updateSerial();

// mySerial.println("AT+CNMI=1,2,0,0,0");

// updateSerial();

}

void loop(){

//activare alarma

if(activateAlarm == true){

lcd.clear();

int sec = 10;

while(sec != 0){

lcd.setCursor(0, 0);

lcd.print("Alarm will be");

lcd.setCursor(0, 1);

lcd.print("activated in ");

lcd.print(sec);

sec = sec - 1;

tone(buzzer, 800, 100);

delay(1000);

lcd.clear();

}

lcd.clear();

if(sec == 0){

lcd.setCursor(3, 0);

lcd.print("ACTIVATED!");

}

initialDistance = getDistance();

alarmActivated = true;

activateAlarm = false;

}

if(alarmActivated == true){

lcd.clear();

lcd.setCursor(3, 0);

lcd.print("ACTIVATED!");

currentDistance = getDistance() + 10;

if (initialDistance > currentDistance){

// Serial.begin(9600);

// mySerial.begin(9600);

Serial.println("Initializing1...");

delay(1000);

mySerial.println("AT+CMGF=1");

updateSerial();

mySerial.println("AT+CMGS=\"+40761187211\"");

updateSerial();

mySerial.print("ALERT!");

updateSerial();

mySerial.write(26);

Serial.end();

mySerial.end();

tone(buzzer, 1000, 500);

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("Enter pass:");

delay(1000);

i = 0;

while(activated){

keyPressed = keypad.getKey();

if(keyPressed == '1' || keyPressed == '2' || keyPressed == '3' ||

keyPressed == '4' || keyPressed == '5' || keyPressed == '6' ||

keyPressed == '7' || keyPressed == '8' || keyPressed == '9' || keyPressed == '0'){

tempPassword += keyPressed;

lcd.setCursor(i, 1);

lcd.print("\*");

i++;

}

if(keyPressed == '#'){

activated = false;

if(tempPassword == password){

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("CORRECT");

delay(2000);

alarmActivated = false;

noTone(buzzer);

}

else{

activated = false;

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("INCORRECT");

delay(2000);

tone(buzzer, 1000, 200);

}

}

}

}

}

if(alarmActivated == false) {

//ce face

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("\*-ACTIVATE");

// lcd.setCursor(0, 1);

//lcd.print("D-SET C-CHANGE");

lcd.clear();

//activare alarma

keyPressed = keypad.getKey();

if (keyPressed == '\*'){

activateAlarm = true;

//tone(buzzer, 1000, 200);

}

//setare parola

if(keyPressed = "#"){

// Serial.begin(9600);

// mySerial.begin(9600);

Serial.println("Initializing2...");

delay(1000);

mySerial.println("AT"); //Once the handshake test is successful, it will back to OK

updateSerial2();

mySerial.println("AT+CMGF=1"); // Configuring TEXT mode

updateSerial2();

mySerial.println("AT+CNMI=1,2,0,0,0"); // Decides how newly arrived SMS messages should be handled

updateSerial2();

}

//setare parola

// if (keyPressed == '\*'){

// enteredPassword = true;

// lcd.clear();

// tone(buzzer, 1000, 200);

// lcd.setCursor(0, 0);

// lcd.print("Set pass");

// delay(2000);

// lcd.clear();

// lcd.setCursor(0, 0);

// lcd.print("Enter pass:");

// while(enteredPassword){

// keyPressed = keypad.getKey();

// if(keyPressed == '1' || keyPressed == '2' || keyPressed == '3' ||

// keyPressed == '4' || keyPressed == '5' || keyPressed == '6' ||

// keyPressed == '7' || keyPressed == '8' || keyPressed == '9' || keyPressed == '0'){

// password += keyPressed;

// lcd.setCursor(i, 1);

// lcd.print("\*");

// i++;

// }

// if(keyPressed == '#'){

// enteredPassword = false;

// lcd.clear();

// lcd.setCursor(0, 0);

// lcd.print("PASSWORD IS SET!");

// delay(3000);

// }

// }

// }

// if (keyPressed == '#'){

// passwordChange = true;

// password = "";

// i = 0;

// lcd.clear();

// tone(buzzer, 1000, 200);

// lcd.setCursor(0, 0);

// lcd.print("Change pass");

// delay(2000);

// lcd.clear();

// lcd.setCursor(0, 0);

// lcd.print("Enter pass:");

// while(passwordChange){

// keyPressed = keypad.getKey();

// if(keyPressed == '1' || keyPressed == '2' || keyPressed == '3' ||

// keyPressed == '4' || keyPressed == '5' || keyPressed == '6' ||

// keyPressed == '7' || keyPressed == '8' || keyPressed == '9' || keyPressed == '0'){

// password += keyPressed;

// lcd.setCursor(i, 1);

// lcd.print("\*");

// i++;

// }

// if(keyPressed == '#'){

// passwordChange = false;

// lcd.clear();

// lcd.setCursor(0, 0);

// lcd.print("PASS IS CHANGED!");

// delay(3000);

// }

// }

// }

}

}

long getDistance(){

digitalWrite(trigPin, LOW);

delayMicroseconds(2);

digitalWrite(trigPin, HIGH);

delayMicroseconds(5);

digitalWrite(trigPin, LOW);

microsec = pulseIn(echoPin, HIGH);

distance = microsec / 29 / 2;

return distance;

}

void updateSerial(){

delay(500);

while(Serial.available()){

mySerial.write(Serial.read());

}

while(mySerial.available()){

Serial.write(mySerial.read());

}

}

void updateSerial2(){

delay(500);

while (Serial.available()) {

mySerial.write(Serial.read());

if(mySerial.read()){

password += mySerial.read();

}

}

while(mySerial.available()) {

Serial.write(mySerial.read());

if(mySerial.read()){

password += mySerial.read();

}

}

}