#include <Servo.h>

#include <LiquidCrystal\_I2C.h>

#include <Keypad.h>

#include <Password.h>

#define buzzer 11

Servo servo;

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

String newPasswordString; //hold the new password

char newPassword[6]; //charater string of newPasswordString

byte a = 5;

bool value = true;

Password password = Password("271004"); //Enter your password

byte maxPasswordLength = 6;

byte currentPasswordLength = 0;

const byte ROWS = 4; // Four rows

const byte COLS = 4; // Four columns

char keys[ROWS][COLS] = {

{'D', 'C', 'B', 'A'},

{'#', '9', '6', '3'},

{'0', '8', '5', '2'},

{'\*', '7', '4', '1'},

};

byte rowPins[ROWS] = {2, 3, 4, 5};

byte colPins[COLS] = {6, 7, 8, 9};

Keypad keypad = Keypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS );

void setup() {

Serial.begin(9600);

pinMode(buzzer, OUTPUT);

servo.attach(10);

servo.write(50);

lcd.init();

lcd.backlight();

lcd.setCursor(3, 0);

lcd.print("WELCOME TO");

lcd.setCursor(0, 1);

lcd.print("DOOR LOCK SYSTEM");

delay(3000);

lcd.clear();

}

void loop() {

lcd.setCursor(1, 0);

lcd.print("ENTER PASSWORD");

char key = keypad.getKey();

if (key != NO\_KEY) {

delay(60);

if (key == 'C') {

resetPassword();

} else if (key == 'D') {

if (value == true) {

doorlocked();

value = false;

} else if (value == false) {

dooropen();

value = true;

}

} else {

processNumberKey(key);

}

}

}

void processNumberKey(char key) {

lcd.setCursor(a, 1);

lcd.print("\*");

a++;

if (a == 11) {

a = 5;

}

currentPasswordLength++;

password.append(key);

if (currentPasswordLength == maxPasswordLength) {

doorlocked();

dooropen();

}

}

void dooropen() {

if (password.evaluate()) {

digitalWrite(buzzer, HIGH);

delay(300);

digitalWrite(buzzer, LOW);

servo.write(50);

delay(100);

lcd.setCursor(0, 0);

lcd.print("CORRECT PASSWORD");

lcd.setCursor(0, 1);

lcd.print("DOOR OPENED");

delay(2000);

lcd.clear();

a = 5;

} else {

digitalWrite(buzzer, HIGH);

delay(200);

digitalWrite(buzzer, LOW);

delay(200);

digitalWrite(buzzer, HIGH);

delay(200);

digitalWrite(buzzer, LOW);

delay(200);

digitalWrite(buzzer, HIGH);

delay(200);

digitalWrite(buzzer, LOW);

delay(200);

lcd.setCursor(0, 0);

lcd.print("WRONG PASSWORD!");

lcd.setCursor(0, 1);

lcd.print("PLEASE TRY AGAIN");

delay(2000);

lcd.clear();

a = 5;

}

resetPassword();

}

void resetPassword() {

password.reset();

currentPasswordLength = 0;

lcd.clear();

a = 5;

}

void doorlocked() {

if (password.evaluate()) {

digitalWrite(buzzer, HIGH);

delay(300);

digitalWrite(buzzer, LOW);

servo.write(110);

delay(100);

lcd.setCursor(0, 0);

lcd.print("CORRECT PASSWORD");

lcd.setCursor(2, 1);

lcd.print("DOOR LOCKED");

delay(2000);

lcd.clear();

a = 5;

} else {

digitalWrite(buzzer, HIGH);

delay(200);

digitalWrite(buzzer, LOW);

delay(200);

digitalWrite(buzzer, HIGH);

delay(200);

digitalWrite(buzzer, LOW);

delay(200);

digitalWrite(buzzer, HIGH);

delay(200);

digitalWrite(buzzer, LOW);

delay(200);

lcd.setCursor(0, 0);

lcd.print("WRONG PASSWORD!");

lcd.setCursor(0, 1);

lcd.print("PLEASE TRY AGAIN");

delay(2000);

lcd.clear();

a = 5;

}

resetPassword();

}