#include <Keypad.h>

#include <LiquidCrystal\_I2C.h>

#include <Servo.h>

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

Servo servo;

#define Password\_Length 5

int Position = 0;

char Particular[Password\_Length];

char Specific[Password\_Length] = "2504";

byte Particular\_Count = 0, Specific\_Count = 0;

char Key;

const byte ROWS = 4;

const byte COLS = 4;

char keys[ROWS][COLS] = {

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

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

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

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

};

bool SmartDoor = true;

byte rowPins[ROWS] = {7, 6, 5, 4};

byte colPins[COLS] = {3, 2, 1, 0};

Keypad myKeypad(makeKeymap(keys), rowPins, colPins, ROWS, COLS);

byte Locked[8] = {

B01110,

B10001,

B10001,

B11111,

B11011,

B11011,

B11011,

B11111

};

byte Opened[8] = {

B01110,

B00001,

B00001,

B11111,

B11011,

B11011,

B11011,

B11111

};

void setup() {

servo.attach(10);

ServoClose();

lcd.init();

lcd.backlight();

lcd.setCursor(0, 0);

lcd.print("Vector X");

lcd.setCursor(0, 1);

lcd.print("Arduino Lock!!!");

delay(4000);

lcd.clear();

}

void loop() {

if (SmartDoor == 0) {

Key = myKeypad.getKey();

if (Key == '#') {

lcd.clear();

ServoClose();

lcd.setCursor(2, 0);

lcd.print("Door Closed");

lcd.createChar(0, Locked);

lcd.setCursor(14, 0);

lcd.write(0);

SmartDoor = 1;

}

} else {

Open();

}

}

void clearData() {

while (Particular\_Count != 0) {

Particular[Particular\_Count--] = 0;

}

return;

}

void ServoOpen() {

for (Position = 180; Position >= 0; Position -= 5) {

servo.write(Position);

delay(15);

}

}

void ServoClose() {

for (Position = 0; Position <= 180; Position += 5) {

servo.write(Position);

delay(15);

}

}

void Open() {

lcd.setCursor(1, 0);

lcd.print("Enter Password:");

Key = myKeypad.getKey();

if (Key) {

Particular[Particular\_Count] = Key;

lcd.setCursor(Particular\_Count, 1);

lcd.print("\*");

Particular\_Count++;

}

if (Particular\_Count == Password\_Length - 1) {

if (strcmp(Particular, Specific) == 0) {

lcd.clear();

ServoOpen();

lcd.setCursor(2, 0);

lcd.print("Door Opened");

lcd.createChar(1, Opened);

lcd.setCursor(14, 0);

lcd.write(1);

lcd.setCursor(0, 1);

lcd.print("Press # to Close");

SmartDoor = 0;

} else {

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("Wrong Password");

lcd.setCursor(0, 1);

lcd.print("Try Again In");

for (int i = 10; i >= 0; i--) {

lcd.setCursor(13, 1);

lcd.print(i);

delay(1000);

}

lcd.clear();

SmartDoor = 1;

}

clearData();

}

}