**اسم الطالب : أيمن محمد نبيل محمد**

**سكشن : 2**

**قسم هندسة الحاسبات ونظم التحكم**

**Lab 7 – Task**

**Smart Lock**

**……………………………………….**

**Screenshot of the circuit**

**A computer screen shot of a circuit board

Description automatically generated**

**Code:**

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**\* File: main.c**

**\* Author: engay**

**\***

**\* Created on April 17, 2024, 5:36 PM**

**\*/**

**#include <xc.h>**

**#define \_XTAL\_FREQ (8000000)**

**#include "common.h"**

**#include "keypad.h"**

**#include "lcd.h"**

**#define delay \_\_delay\_ms**

**char Get\_Password(void)**

**{**

**int i;**

**int state=0;**

**lcd\_cmd(\_LCD\_CLEAR);**

**lcd\_cmd(\_LCD\_RETURN\_HOME);**

**lcd\_cmd(\_LCD\_CURSOR\_OFF);**

**lcd\_out(1,1,"Enter the password");**

**char pass;**

**lcd\_set\_cursor(2,1);**

**for(i=0;i<4;i++)**

**{**

**pass='\0';**

**while(pass=='\0')**

**{**

**pass=keypad\_get\_key();**

**}**

**lcd\_chr\_cp(pass);**

**if(pass!=i+1+48)**

**{**

**state++;**

**}**

**}**

**delay(200); // for seeing the last num**

**return state==0?1:0;**

**}**

**void main(void) {**

**lcd\_init();**

**keypad\_init();**

**lcd\_cmd(\_LCD\_CLEAR);**

**lcd\_cmd(\_LCD\_RETURN\_HOME);**

**lcd\_cmd(\_LCD\_CURSOR\_OFF);**

**lcd\_out(1,1,"WELCOME USER");**

**delay(2000);**

**int i;**

**char flag=0;**

**while(1)**

**{**

**flag=Get\_Password();**

**if(flag==1)**

**{**

**break;**

**}**

**lcd\_cmd(\_LCD\_CLEAR);**

**lcd\_cmd(\_LCD\_RETURN\_HOME);**

**lcd\_cmd(\_LCD\_CURSOR\_OFF);**

**lcd\_out(1,1,"WRONG PASSWORD");**

**delay(1500);**

**}**

**lcd\_cmd(\_LCD\_CLEAR);**

**lcd\_cmd(\_LCD\_RETURN\_HOME);**

**lcd\_cmd(\_LCD\_CURSOR\_OFF);**

**lcd\_out(1,1,"Ayman");**

**lcd\_out(2,1,"Mohamed");**

**while(1)**

**{**

**for(i=0;i<8;i++)**

**{**

**lcd\_cmd(\_LCD\_SHIFT\_RIGHT);**

**delay(300);**

**}**

**for(i=0;i<8;i++)**

**{**

**lcd\_cmd(\_LCD\_SHIFT\_LEFT);**

**delay(300);**

**}**

**}**

**return;**

**}**