

```

#pragma config(Sensor, S1, CS1, sensorEV3_Color, modeEV3Color_Color)
#pragma config(Sensor, S2, CS2, sensorEV3_Color, modeEV3Color_Color)
#pragma config(Sensor, S3, CS_karusel, sensorEV3_Color, modeEV3Color_Color)
#pragma config(Sensor, S4, TS, sensorEV3_Touch)
#pragma config(Motor, motorA, dvere, tmotorEV3_Medium, PIDControl, encoder)
#pragma config(Motor, motorB, , tmotorEV3_Large, openLoop)
#pragma config(Motor, motorC, , tmotorEV3_Large, openLoop)
#pragma config(Motor, motorD, karusel, tmotorEV3_Medium, PIDControl, encoder)
/**!!Code automatically generated by 'ROBOTC' configuration wizard !!*/

```

```

string card_ID;
//cislo karty (aktuálne)
string card_read;
//kontrolné číslo karty (porovnávacie)
bool card_ins;
//ci je karta vlozená, ak áno, tak true
int button_ID;
//ID_buttons
int numID = 0;
//peet hviezdiek, max 8;
int PIN = 0;
//PIN zadaný
string num = "";
//hviezdicky PIN
string karta = "";

```

```

int PIN_repeat;
// zopakovany PIN
int scroll_num;
int scroll_num_1;
int scroll_num_2;

```

```

//defaultné PINY
int PIN_00 = 2451;

```

```

int PIN_01 = 22;
int PIN_02 = 23;
int PIN_03 = 24;
int PIN_04 = 25;

```

```

int PIN_05 = 32;
int PIN_06 = 33;
int PIN_07 = 34;
int PIN_08 = 35;

```

```

int PIN_09 = 42;
int PIN_10 = 43;
int PIN_11 = 44;
int PIN_12 = 45;

```

```

int PIN_13 = 52;
int PIN_14 = 53;
int PIN_15 = 54;
int PIN_16 = 55;

```

```

int PIN_ID = 00;

```

```

//zlé piny (PMNP)

```

```

int pmnp_01 = 3;
int pmnp_02 = 3;
int pmnp_03 = 3;
int pmnp_04 = 3;

```

```

int pmnp_05 = 3;
int pmnp_06 = 3;
int pmnp_07 = 3;
int pmnp_08 = 3;

```

```

int pmnp_09 = 3;
int pmnp_10 = 3;
int pmnp_11 = 3;
int pmnp_12 = 3;

```

```
int pmnp_13 = 3;
int pmnp_14 = 3;
int pmnp_15 = 3;
int pmnp_16 = 3;

//odblokovana

bool OK_01 = true;
bool OK_02 = true;
bool OK_03 = true;
bool OK_04 = true;

bool OK_05 = true;
bool OK_06 = true;
bool OK_07 = true;
bool OK_08 = true;

bool OK_09 = true;
bool OK_10 = true;
bool OK_11 = true;
bool OK_12 = true;

bool OK_13 = true;
bool OK_14 = true;
bool OK_15 = true;
bool OK_16 = true;

bool OK_ID = false;

string menu;
string menu_1;

//default usernames
string user_00 = "univers.";

string user_01 = "us.(2_2)";
string user_02 = "us.(2_3)";
string user_03 = "us.(2_4)";
string user_04 = "us.(2_5)";

string user_05 = "us.(3_2)";
string user_06 = "us.(3_3)";
string user_07 = "us.(3_4)";
string user_08 = "us.(3_5)";

string user_09 = "us.(4_2)";
string user_10 = "us.(4_3)";
string user_11 = "us.(4_4)";
string user_12 = "us.(4_5)";

string user_13 = "us.(5_2)";
string user_14 = "us.(5_3)";
string user_15 = "us.(5_4)";
string user_16 = "us.(5_5)";

string user_ID = "----";

string letters[27];
string LETTER[27];
string special[22];
string numbers[11];

string username_00;

string username_01;
string username_02;
string username_03;
string username_04;

string username_05;
```

```
string username_06;
string username_07;
string username_08;

string username_09;
string username_10;
string username_11;
string username_12;

string username_13;
string username_14;
string username_15;
string username_16;

int letter_ID;
int letter_group;
int letter_group_ID;
int letter_group_ID_max;
string u_name[08];
```

```
bool rewrite;
```

```
string username_ID;
```

```
//=====
```

```
//skupiny znakov + deklarácia
```

```
void znaky()
```

```
{
```

```
    letters[00] = " ";
    letters[01] = "a";
    letters[02] = "b";
    letters[03] = "c";
    letters[04] = "d";
    letters[05] = "e";
    letters[06] = "f";
    letters[07] = "g";
    letters[08] = "h";
    letters[09] = "i";
    letters[10] = "j";
    letters[11] = "k";
    letters[12] = "l";
    letters[13] = "m";
    letters[14] = "n";
    letters[15] = "o";
    letters[16] = "p";
    letters[17] = "q";
    letters[18] = "r";
    letters[19] = "s";
    letters[20] = "t";
    letters[21] = "u";
    letters[22] = "v";
    letters[23] = "w";
    letters[24] = "x";
    letters[25] = "y";
    letters[26] = "z";
```

```
    LETTER[00] = " ";
    LETTER[01] = "A";
    LETTER[02] = "B";
    LETTER[03] = "C";
    LETTER[04] = "D";
    LETTER[05] = "E";
    LETTER[06] = "F";
    LETTER[07] = "G";
    LETTER[08] = "H";
    LETTER[09] = "I";
    LETTER[10] = "J";
    LETTER[11] = "K";
    LETTER[12] = "L";
    LETTER[13] = "M";
    LETTER[14] = "N";
    LETTER[15] = "O";
```

```
LETTER[16] = "P";
LETTER[17] = "Q";
LETTER[18] = "R";
LETTER[19] = "S";
LETTER[20] = "T";
LETTER[21] = "U";
LETTER[22] = "V";
LETTER[23] = "W";
LETTER[24] = "X";
LETTER[25] = "Y";
LETTER[26] = "Z";

special[00] = " ";
special[01] = """;
special[02] = "<";
special[03] = ">";
special[04] = "#";
special[05] = "&";
special[06] = "{";
special[07] = "}";
special[08] = "[";
special[09] = "]";
special[10] = "|";
special[11] = "_";
special[12] = "-";
special[13] = "!";
special[14] = "%";
special[15] = "+";
special[16] = ".";
special[17] = "*";
special[18] = "/";
special[19] = "?";
special[20] = ",";
special[21] = ".";

numbers[00] = " ";
numbers[01] = "0";
numbers[02] = "1";
numbers[03] = "2";
numbers[04] = "3";
numbers[05] = "4";
numbers[06] = "5";
numbers[07] = "6";
numbers[08] = "7";
numbers[09] = "8";
numbers[10] = "9";
}
```

```
void username()
//titulny riadok v menu
{
karta = "(00)|";
karta = karta + user_00;
username_00 = karta;

karta = "(01)|";
karta = karta + user_01;
username_01 = karta;

karta = "(02)|";
karta = karta + user_02;
username_02 = karta;

karta = "(03)|";
karta = karta + user_03;
username_03 = karta;

karta = "(04)|";
karta = karta + user_04;
username_04 = karta;

karta = "(05)|";
karta = karta + user_05;
```

```

username_05 = karta;

karta = "(06)";
karta = karta + user_06;
username_06 = karta;

karta = "(07)";
karta = karta + user_07;
username_07 = karta;

karta = "(08)";
karta = karta + user_08;
username_08 = karta;

karta = "(09)";
karta = karta + user_09;
username_09 = karta;

karta = "(10)";
karta = karta + user_10;
username_10 = karta;

karta = "(11)";
karta = karta + user_11;
username_11 = karta;

karta = "(12)";
karta = karta + user_12;
username_12 = karta;

karta = "(13)";
karta = karta + user_13;
username_13 = karta;

karta = "(14)";
karta = karta + user_14;
username_14 = karta;

karta = "(15)";
karta = karta + user_15;
username_15 = karta;

karta = "(16)";
karta = karta + user_16;
username_16 = karta;

}

int degrees;
int a;
int card_open;
int x;

void box()
//natocenie boxu
{
    setMotorTarget(motorD, ((a * degrees)), 50);
    waitUntilMotorStop(motorD);
}

void read_card()
//zisti kartu
{
    card_ID = "--";

    if ((getColorName(S2) == colorWhite) && (getColorName(S2) == colorWhite)) card_ID = "00";

    if ((getColorName(S1) == colorBlue) && (getColorName(S2) == colorBlue)) card_ID = "01";
    if ((getColorName(S1) == colorBlue) && (getColorName(S2) == colorGreen)) card_ID = "02";
    if ((getColorName(S1) == colorBlue) && (getColorName(S2) == colorYellow)) card_ID = "03";
    if ((getColorName(S1) == colorBlue) && (getColorName(S2) == colorRed)) card_ID = "04";
}

```

```

if ((getColorName(S1) == colorGreen) && (getColorName(S2) == colorBlue)) card_ID = "05";
if ((getColorName(S1) == colorGreen) && (getColorName(S2) == colorGreen)) card_ID = "06";
if ((getColorName(S1) == colorGreen) && (getColorName(S2) == colorYellow)) card_ID = "07";
if ((getColorName(S1) == colorGreen) && (getColorName(S2) == colorRed)) card_ID = "08";

if ((getColorName(S1) == colorYellow) && (getColorName(S2) == colorBlue)) card_ID = "09";
if ((getColorName(S1) == colorYellow) && (getColorName(S2) == colorGreen)) card_ID = "10";
if ((getColorName(S1) == colorYellow) && (getColorName(S2) == colorYellow)) card_ID = "11";
if ((getColorName(S1) == colorYellow) && (getColorName(S2) == colorRed)) card_ID = "12";

if ((getColorName(S1) == colorRed) && (getColorName(S2) == colorBlue)) card_ID = "13";
if ((getColorName(S1) == colorRed) && (getColorName(S2) == colorGreen)) card_ID = "14";
if ((getColorName(S1) == colorRed) && (getColorName(S2) == colorYellow)) card_ID = "15";
if ((getColorName(S1) == colorRed) && (getColorName(S2) == colorRed)) card_ID = "16";
}

void card_insert()
//kontroluj, ci je vlozená
{
    read_card();
    if (card_read != card_ID) card_ins = false;
}

void buttons()
//precitaj tlacidla
{
    if (getButtonPress(LEFT_BUTTON) == 1) button_ID = 1;
    if (getButtonPress(ENTER_BUTTON) == 1) button_ID = 2;
    if (getButtonPress(RIGHT_BUTTON) == 1) button_ID = 3;
    if (getButtonPress(UP_BUTTON) == 1) button_ID = 4;
    if (getButtonPress(DOWN_BUTTON) == 1) button_ID = 5;
}

void AnyButton()
//iadne stlaenené, eakaj na stlaenie / vybratie karty
{
    while ((getButtonPress(ANY_BUTTON) == 0)&&(getTouchValue (S4) == 0)&&(card_ins == true))
    {
        setLEDColor(ledGreen);
        card_insert();
    }
}

void NoButton()
//nejaké stlacené, cakaj na pustenie / vybratie karty
{
    while ((getButtonPress(ANY_BUTTON) == 1)&&(getTouchValue (S4) == 0)&&(card_ins == true))
    {
        card_insert();
    }
}

void blocked()
//karta zablokovana
{
    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
    displayBigStringAt(10,120,"%s","This card has");
    displayBigStringAt(04,100,"%s"," been blocked ");
    displayBigStringAt(04,080,"%s","-----");
    displayBigStringAt(10,060,"%s"," Please, ");
    displayBigStringAt(10,040,"%s"," contact the ");
    displayBigStringAt(04,020,"%s"," safe admin ");
}

bool door_OK;

void door_open()
//otvor dvere
{
    door_OK = false;
    setMotorSpeed(motorA, -50);
    sleep(3000);
}

```

```

    setMotorSpeed(motorA, 0);
}

void door_close()
//zatvor dvere
{
    door_OK = true;
    setMotorSpeed(motorA, +50);
    sleep(3000);
    setMotorSpeed(motorA, 0);
}
//-----

//-----
//-1800 user menu
task main()
{
    setLEDColor(ledGreenFlash);
    znaky();

    while (door_OK == false)
    //sync.
    {
        drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
        displayBigStringAt(04,120,"%s","Door are being");
        displayBigStringAt(04,100,"%s"," synchronized ");
        displayBigStringAt(04,080,"%s"," Step: 1 of 1 ");
        displayBigStringAt(04,060,"%s","-----");
        displayBigStringAt(04,040,"%s"," Step: 1 of 3 ");

        setMotorSpeed(motorA, +50);
        displayStringAt(06,024,"%s","For confirm door sync.");
        displayStringAt(06,012,"%s","press ENTER btn./else 2 btn.");
        while ((getTouchValue(S4) == false)&&(getButtonPress(ENTER_BUTTON) == false))
        if (getTouchValue(S4) == true) door_OK = true;
        if (getButtonPress(ENTER_BUTTON) == true) door_OK = false;
        setMotorSpeed(motorA, 0);
    }

    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
    displayBigStringAt(04,120,"%s","Wheel is being");
    displayBigStringAt(04,100,"%s"," synchronized ");
    displayBigStringAt(04,080,"%s"," Step: 1 of 2 ");
    displayBigStringAt(04,060,"%s","-----");
    displayBigStringAt(04,040,"%s"," Step: 2 of 3 ");

    //setMotorTarget(motorD, 500, 50);
    //waitUntilMotorStop(motorD);
    setMotorSpeed(motorD, +50);

    while (getColorName(S3) != colorWhite)
    {
        displayBigStringAt(66,020,"%d",getMotorEncoder(motorD));
    }
    resetMotorEncoder(motorD);

    displayBigStringAt(04,080,"%s"," Step: 2 of 2 ");

    displayBigStringAt(04,040,"%s"," Step: 3 of 3 ");
    setMotorTarget(motorD, 200, 50);
    waitUntilMotorStop(motorD);
    setMotorSpeed(motorD, +50);

    while (getColorName(S3) != colorWhite)
    {
        displayBigStringAt(66,020,"%d",getMotorEncoder(motorD));
    }
    setMotorSpeed(motorD, 0);

    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
    displayBigStringAt(10,120,"%s"," NUT 7E4 ");

```

```

displayBigStringAt(04,100,"%s","  has been  ");
displayBigStringAt(04,080,"%s"," synchronized ");
displayBigStringAt(04,060,"%s","-----");

displayBigStringAt(04,020,"%s", "8 boxes:    d");
displayBigStringAt(106,020,"%d",round(getMotorEncoder(motorD)));
degrees = round(getMotorEncoder(motorD) / 8);

displayBigStringAt(04,040,"%s", "1 box is    d");
displayBigStringAt(118,040,"%d",degrees);

resetMotorEncoder(motorD);

sleep(5000);

repeat(forever)
{

    repeat(forever)
    {
        PIN = -1;
        drawBmpfile(0,127,"/home/root/lms2012/prjs/insert_card.rgf");

        displayBigStringAt(10,110,"%s"," Please,  ");
        displayBigStringAt(10,090,"%s"," insert your ");
        displayBigStringAt(10,070,"%s"," ID card  ");
        card_ins = false;
        read_card();
        //caka na vlozenie karty
        if (card_ID != "--")
        {
            card_ins = true;
            card_read = card_ID;
            drawBmpfile(0,127,"/home/root/lms2012/prjs/accepted_card.rgf");
            karta = " Card ";
            karta = karta + card_read;
            karta = karta + " has ";
            if (card_ins == true) displayBigStringAt(10,100, "%s", karta);
            if (card_ins == true) displayBigStringAt(10,080, "%s", "been inserted");
            setLEDColor(ledOrangeFlash);

            //ukladanie pouzivatelya do univerz. prem.
            if (card_read == "00") user_ID = user_00;

            if (card_read == "01") user_ID = user_01;
            if (card_read == "02") user_ID = user_02;
            if (card_read == "03") user_ID = user_03;
            if (card_read == "04") user_ID = user_04;

            if (card_read == "05") user_ID = user_05;
            if (card_read == "06") user_ID = user_06;
            if (card_read == "07") user_ID = user_07;
            if (card_read == "08") user_ID = user_08;

            if (card_read == "09") user_ID = user_09;
            if (card_read == "10") user_ID = user_10;
            if (card_read == "11") user_ID = user_11;
            if (card_read == "12") user_ID = user_12;

            if (card_read == "13") user_ID = user_13;
            if (card_read == "14") user_ID = user_14;
            if (card_read == "15") user_ID = user_15;
            if (card_read == "16") user_ID = user_16;

            playSoundFile("Confirm.rsf");
            sleep(2000);
            drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
            displayBigStringAt(10,110,"%s"," Welcome  ");
            displayBigStringAt(40,90,"%s", user_ID);
            displayBigStringAt(10,70,"%s", "Please, enter");
        }
    }
}

```



```

displayBigStringAt(04,50,"%s", " your PIN ");
drawRect(38,28,137,9);
}

while (card_ins == true)
{
card_insert();

//-----
PIN = 0;
num = "";
numID = 0;

waitUntil((getTouchValue (S4) == 0) || (card_ins == false));

if (card_read == "00") OK_ID = true;

if (card_read == "01") OK_ID = OK_01;
if (card_read == "02") OK_ID = OK_02;
if (card_read == "03") OK_ID = OK_03;
if (card_read == "04") OK_ID = OK_04;

if (card_read == "05") OK_ID = OK_05;
if (card_read == "06") OK_ID = OK_06;
if (card_read == "07") OK_ID = OK_07;
if (card_read == "08") OK_ID = OK_08;

if (card_read == "09") OK_ID = OK_09;
if (card_read == "10") OK_ID = OK_10;
if (card_read == "11") OK_ID = OK_11;
if (card_read == "12") OK_ID = OK_12;

if (card_read == "13") OK_ID = OK_13;
if (card_read == "14") OK_ID = OK_14;
if (card_read == "15") OK_ID = OK_15;
if (card_read == "16") OK_ID = OK_16;

while ((getTouchValue (S4) == 0)&&(numID < 8)&&(card_ins == true)&&(OK_ID == true))
//zadavanie pinu
{
AnyButton();
setLEDColor(ledGreen);
num = num + "*";
if (getTouchValue (S4) == 0) playSoundFile("Click.rs");
setLEDColor(ledOrange);
displayBigStringAt(40,26,"%s",num);
buttons();
NoButton();
PIN = PIN * 10 + button_ID;
numID = numID + 1;
card_insert();
}

PIN = (PIN - button_ID)/10;
if (numID == 8)
{
displayInverseBigStringAt(40,26,"%s",num);
card_insert();
while((getTouchValue (S4) == 0)&&(card_ins == true)) card_insert();
}

if (card_read == "16") PIN_ID = PIN_16;
if (card_read == "15") PIN_ID = PIN_15;
if (card_read == "14") PIN_ID = PIN_14;
if (card_read == "13") PIN_ID = PIN_13;

if (card_read == "12") PIN_ID = PIN_12;
if (card_read == "11") PIN_ID = PIN_11;
if (card_read == "10") PIN_ID = PIN_10;
if (card_read == "09") PIN_ID = PIN_09;

if (card_read == "08") PIN_ID = PIN_08;
if (card_read == "07") PIN_ID = PIN_07;
if (card_read == "06") PIN_ID = PIN_06;

```



```

if ((button_ID == 2)&&(scroll_num == 2))
/**
{
    while ((card_ins == true)&&(getButtonPress(ENTER_BUTTON) == 0))
    {
        card_insert();

        if (scroll_num_2 == 0)
        {
            displayBigStringAt(10, 050, "%s", ">back to menu");
            displayBigStringAt(10, 030, "%s", username_00);

            if (scroll_num_1 == 1) displayInverseBigStringAt(10, 050, "%s", ">back to menu");
            if (scroll_num_1 == 2) displayInverseBigStringAt(10, 030, "%s", username_00);

            while ((getButtonPress(ANY_BUTTON) == 1)&&(card_ins == true))
            {
                card_insert();
            }
            while ((getButtonPress(ANY_BUTTON) == 0)&&(card_ins == true))
            {
                card_insert();
            }
        }

        if (scroll_num_2 == 1)
        {
            displayBigStringAt(10, 050, "%s", username_01);
            displayBigStringAt(10, 030, "%s", username_02);

            if (scroll_num_1 == 1) displayInverseBigStringAt(10, 050, "%s", username_01);
            if (scroll_num_1 == 2) displayInverseBigStringAt(10, 030, "%s", username_02);

            while ((getButtonPress(ANY_BUTTON) == 1)&&(card_ins == true))
            {
                card_insert();
            }
            while ((getButtonPress(ANY_BUTTON) == 0)&&(card_ins == true))
            {
                card_insert();
            }
        }

        if (scroll_num_2 == 2)
        {
            displayBigStringAt(10, 050, "%s", username_03);
            displayBigStringAt(10, 030, "%s", username_04);

            if (scroll_num_1 == 1) displayInverseBigStringAt(10, 050, "%s", username_03);
            if (scroll_num_1 == 2) displayInverseBigStringAt(10, 030, "%s", username_04);

            while ((getButtonPress(ANY_BUTTON) == 1)&&(card_ins == true))
            {
                card_insert();
            }
            while ((getButtonPress(ANY_BUTTON) == 0)&&(card_ins == true))
            {
                card_insert();
            }
        }

        if (scroll_num_2 == 3)
        {
            displayBigStringAt(10, 050, "%s", username_05);
            displayBigStringAt(10, 030, "%s", username_06);

            if (scroll_num_1 == 1) displayInverseBigStringAt(10, 050, "%s", username_05);
            if (scroll_num_1 == 2) displayInverseBigStringAt(10, 030, "%s", username_06);
        }
    }
}

```

```

while ((getButtonPress(ANY_BUTTON) == 1)&&(card_ins == true))
{
    card_insert();
}
while ((getButtonPress(ANY_BUTTON) == 0)&&(card_ins == true))
{
    card_insert();
}
}

if (scroll_num_2 == 4)
{
    displayBigStringAt(10, 050, "%s",username_07);
displayBigStringAt(10, 030, "%s",username_08);

    if (scroll_num_1 == 1) displayInverseBigStringAt(10, 050, "%s",username_07);
if (scroll_num_1 == 2) displayInverseBigStringAt(10, 030, "%s",username_08);

while ((getButtonPress(ANY_BUTTON) == 1)&&(card_ins == true))
{
    card_insert();
}
while ((getButtonPress(ANY_BUTTON) == 0)&&(card_ins == true))
{
    card_insert();
}
}

if (scroll_num_2 == 5)
{
    displayBigStringAt(10, 050, "%s",username_09);
displayBigStringAt(10, 030, "%s",username_10);

    if (scroll_num_1 == 1) displayInverseBigStringAt(10, 050, "%s",username_09);
if (scroll_num_1 == 2) displayInverseBigStringAt(10, 030, "%s",username_10);

while ((getButtonPress(ANY_BUTTON) == 1)&&(card_ins == true))
{
    card_insert();
}
while ((getButtonPress(ANY_BUTTON) == 0)&&(card_ins == true))
{
    card_insert();
}
}

if (scroll_num_2 == 6)
{
    displayBigStringAt(10, 050, "%s",username_11);
displayBigStringAt(10, 030, "%s",username_12);

    if (scroll_num_1 == 1) displayInverseBigStringAt(10, 050, "%s",username_11);
if (scroll_num_1 == 2) displayInverseBigStringAt(10, 030, "%s",username_12);

while ((getButtonPress(ANY_BUTTON) == 1)&&(card_ins == true))
{
    card_insert();
}
while ((getButtonPress(ANY_BUTTON) == 0)&&(card_ins == true))
{
    card_insert();
}
}

if (scroll_num_2 == 7)
{
    displayBigStringAt(10, 050, "%s",username_13);
displayBigStringAt(10, 030, "%s",username_14);
}

```

```

        if (scroll_num_1 == 1) displayInverseBigStringAt(10, 050, "%s",username_13);
    if (scroll_num_1 == 2) displayInverseBigStringAt(10, 030, "%s",username_14);

    while ((getButtonPress(ANY_BUTTON) == 1)&&(card_ins == true))
    {
        card_insert();
    }
    while ((getButtonPress(ANY_BUTTON) == 0)&&(card_ins == true))
    {
        card_insert();
    }
}

if (scroll_num_2 == 8)
{
    displayBigStringAt(10, 050, "%s",username_15);
    displayBigStringAt(10, 030, "%s",username_16);

    if (scroll_num_1 == 1) displayInverseBigStringAt(10, 050, "%s",username_15);
    if (scroll_num_1 == 2) displayInverseBigStringAt(10, 030, "%s",username_16);

    while ((getButtonPress(ANY_BUTTON) == 1)&&(card_ins == true))
    {
        card_insert();
    }
    while ((getButtonPress(ANY_BUTTON) == 0)&&(card_ins == true))
    {
        card_insert();
    }
}
setLEDColor(ledGreenFlash);
buttons();
playSoundFile("Click.rs");
if (button_ID == 4) scroll_num_1 = scroll_num_1 - 1;
if (scroll_num_1 == 0) scroll_num_2 = scroll_num_2 - 1;
if (scroll_num_1 == 0) scroll_num_1 = 2;
if (scroll_num_2 == -1) scroll_num_2 = 8;
if (button_ID == 5) scroll_num_1 = scroll_num_1 + 1;
if (scroll_num_1 == 3) scroll_num_2 = scroll_num_2 + 1;
if (scroll_num_1 == 3) scroll_num_1 = 1;
if (scroll_num_2 == 9) scroll_num_2 = 0;
}

if ((scroll_num_1 == 1)&&(scroll_num_2 == 0)) menu = "--";
if ((scroll_num_1 == 2)&&(scroll_num_2 == 0)) menu = "00";
if ((scroll_num_1 == 1)&&(scroll_num_2 == 1)) menu = "01";
if ((scroll_num_1 == 2)&&(scroll_num_2 == 1)) menu = "02";
if ((scroll_num_1 == 1)&&(scroll_num_2 == 2)) menu = "03";
if ((scroll_num_1 == 2)&&(scroll_num_2 == 2)) menu = "04";
if ((scroll_num_1 == 1)&&(scroll_num_2 == 3)) menu = "05";
if ((scroll_num_1 == 2)&&(scroll_num_2 == 3)) menu = "06";
if ((scroll_num_1 == 1)&&(scroll_num_2 == 4)) menu = "07";
if ((scroll_num_1 == 2)&&(scroll_num_2 == 4)) menu = "08";
if ((scroll_num_1 == 1)&&(scroll_num_2 == 5)) menu = "09";
if ((scroll_num_1 == 2)&&(scroll_num_2 == 5)) menu = "10";
if ((scroll_num_1 == 1)&&(scroll_num_2 == 6)) menu = "11";
if ((scroll_num_1 == 2)&&(scroll_num_2 == 6)) menu = "12";
if ((scroll_num_1 == 1)&&(scroll_num_2 == 7)) menu = "13";
if ((scroll_num_1 == 2)&&(scroll_num_2 == 7)) menu = "14";
if ((scroll_num_1 == 1)&&(scroll_num_2 == 8)) menu = "15";
if ((scroll_num_1 == 2)&&(scroll_num_2 == 8)) menu = "16";

/////-----

if ((menu != "--")&&(menu == "00"))
{
    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
    displayBigStringAt(10, 120, "%s", "Logged on as:");
    karta = "";
    karta = "{ ";
    karta = karta + menu;
    karta = karta + " }";
}

```

```

if ((scroll_num_1 == 2)&&(scroll_num_2 == 0)) username_ID = username_00;

displayBigStringAt(10, 100, "%s",username_ID);
displayBigStringAt(04, 080, "%s","-----");
drawRect(8,65,168,6);
displayInverseBigStringAt(10, 063, "%s","Change PIN  ");
displayBigStringAt(10, 043, "%s","Change name  ");
displayBigStringAt(10, 023, "%s",>back to menu");
scroll_num_2 = 1;
menu_1 = "";

while ((card_ins == true)&&(menu_1 != "--"))
{
while ((getButtonPress(ANY_BUTTON) == 1)&&(card_ins == true))
{
card_insert();
}
while ((card_ins == true)&&(getButtonPress(ENTER_BUTTON) == 0))
{
while ((getButtonPress(ANY_BUTTON) == 1)&&(card_ins == true))
{
card_insert();
}
while ((getButtonPress(ANY_BUTTON) == 0)&&(card_ins == true))
{
card_insert();
}
setLEDColour(ledGreenFlash);
buttons();
playSoundFile("Click.rsf");
if (button_ID == 4) scroll_num_2 = scroll_num_2 - 1;
if (scroll_num_2 == 0) scroll_num_2 = 3;

if (button_ID == 5) scroll_num_2 = scroll_num_2 + 1;
if (scroll_num_2 == 4) scroll_num_2 = 1;

displayBigStringAt(10, 063, "%s","Change PIN  ");
displayBigStringAt(10, 043, "%s","Change name  ");
displayBigStringAt(10, 023, "%s",>back to menu");
if (scroll_num_2 == 1) displayInverseBigStringAt(10, 063, "%s","Change PIN  ");
if (scroll_num_2 == 2) displayInverseBigStringAt(10, 043, "%s","Change name  ");
if (scroll_num_2 == 3) displayInverseBigStringAt(10, 023, "%s",>back to menu");

card_insert();
}

while ((getButtonPress(ENTER_BUTTON) == 1)&&(card_ins == true))
{
card_insert();
}

if ((scroll_num_2 == 01)&&(card_ins == true))
{
while((getTouchValue (S4) == 1)&&(card_ins == true)) card_insert();
setLEDColour(ledGreenFlash);
drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
displayBigStringAt(04,90,"%s", "-----");
displayBigStringAt(4,110, "%s", username_ID);
displayBigStringAt(04,70,"%s", " Enter your  ");
displayBigStringAt(10,50,"%s", " new PIN  ");
drawRect(38,28,137,9);
playSoundFile("Connect.rsf");
setLEDColour(ledGreenFlash);
sleep(1000);
numID = 0;
PIN = 0;
num = "";
while ((getTouchValue (S4) == 0)&&(numID < 8)&&(card_ins == true)&&(OK_ID == true))
{
NoButton();
setLEDColour(ledGreen);
AnyButton();
setLEDColour(ledOrange);
}
}
}

```

```

        num = num + "*";
        if (getTouchValue (S4) == 0)    playSoundFile("Click.rsf");
        displayBigStringAt(40,26,"%s",num);
        buttons();
        NoButton();
        PIN = PIN * 10 + button_ID;
        numID = numID + 1;
        card_insert();
    }
    PIN = (PIN - button_ID)/10;
    if (numID == 8)
    {
        displayInverseBigStringAt(40,26,"%s",num);
        card_insert();
        while((getTouchValue (S4) == 0)&&(card_ins == true)) card_insert();
    }
    while((getTouchValue (S4) == 1)&&(card_ins == true)) card_insert();
    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
    displayBigStringAt(04,090,"%s", "-----");
    displayBigStringAt(10,110,"%s", username_ID);
    displayBigStringAt(10,70,"%s", " Repeat your ");
    displayBigStringAt(10,50,"%s", "  new PIN  ");
    drawRect(38,28,137,9);
    displayBigStringAt(40,26,"%s", "      ");
    sleep(1000);

numID = 0;
PIN_repeat = 0;
num = "";
while ((getTouchValue (S4) == 1)&&(OK_ID == true)&&(card_ins == true)) card_insert();
while ((getTouchValue (S4) == 0)&&(numID < 8)&&(card_ins == true)&&(OK_ID == true))
    {
        NoButton();
        setLEDColor(ledGreen);
        AnyButton();
        num = num + "*";
        if (getTouchValue (S4) == 0)    playSoundFile("Click.rsf");
        setLEDColor(ledOrange);
        displayBigStringAt(40,26,"%s",num);
        buttons();
        NoButton();
        PIN_repeat = PIN_repeat * 10 + button_ID;
        numID = numID + 1;
        card_insert();
    }
    PIN_repeat = (PIN_repeat - button_ID)/10;
    if (numID == 8)
    {
        displayInverseBigStringAt(40,26,"%s",num);
        card_insert();
        while((getTouchValue (S4) == 0)&&(card_ins == true)) card_insert();
    }

    if (card_ins == true) PIN_00 = PIN;

    if (PIN == PIN_repeat) PIN_ID = PIN;

    if ((PIN == PIN_repeat)&&(card_ins == true))
    {
        setLEDColor(ledGreenFlash);
        drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
        displayBigStringAt(04,100,"%s", "-----");
        displayBigStringAt(10,120,"%s", username_ID);
        displayBigStringAt(4,080,"%s", " Your PIN has ");
        displayBigStringAt(4,060,"%s", "  been  ");
        displayBigStringAt(10,040,"%s", " successfully ");
        displayBigStringAt(10,020,"%s", "  changed  ");
        playSoundFile("Start up.rsf");
        sleep(3000);
    }
    if ((PIN != PIN_repeat)&&(card_ins == true))
    {
        setLEDColor(ledRedFlash);

```

```

        drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
        displayBigStringAt(04,100,"%s", "-----");
displayBigStringAt(10,120,"%s", username_ID);
displayBigStringAt(04,080,"%s", " Entered PINs ");
displayBigStringAt(10,060,"%s", "did not match");
displayBigStringAt(10,040,"%s", " PIN has not ");
displayBigStringAt(04,020,"%s", " been changed ");
playSoundFile("Error alarm.rsf");
sleep(3000);
}

    menu_1 = "--";
}

if ((scroll_num_2 == 02)&&(card_ins == true))
{
    letter_ID = 0;
    letter_group = 1;
    letter_group_ID = 0;
    playSoundFile("Click.rsf");
    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
    displayBigStringAt(04,090,"%s", "-----");
displayBigStringAt(10,110,"%s", username_ID);
    u_name[00] = "-";
    u_name[01] = "-";
    u_name[02] = "-";
    u_name[03] = "-";
    u_name[04] = "-";
    u_name[05] = "-";
    u_name[06] = "-";
    u_name[07] = "-";

    drawRect(14,72,113,53);
    displayBigStringAt(016, 070, "%s", "-----");
    displayBigStringAt(120, 070, "%s", "<A>");
    displayInverseBigStringAt(16, 070, "%s", "-");
    displayBigStringAt(004, 050, "%s", "-----");
    displayStringAt(011, 032, "%s", "Btn 1/3: ch. let. position");
    displayStringAt(011, 022, "%s", "Btn 2: change letter group");
    displayStringAt(011, 012, "%s", "Button 4/5: letter up/down");

    while((getTouchValue (S4) == 0)&&(card_ins == true))
    {
        card_insert();
        setLEDColor(ledOrange);
        while((getTouchValue (S4) == 0)&&(card_ins == true)&&(getButtonPress(ANY_BUTTON) == 1))
        {
            card_insert();
        }

        while((getTouchValue (S4) == 0)&&(card_ins == true)&&(getButtonPress(ANY_BUTTON) == 0))
        {
            card_insert();
            setLEDColor(ledGreen);
        }

        karta = "";
        karta = karta + u_name[00];
        karta = karta + u_name[01];
        karta = karta + u_name[02];
        karta = karta + u_name[03];
        karta = karta + u_name[04];
        karta = karta + u_name[05];
        karta = karta + u_name[06];
        karta = karta + u_name[07];

        if (getButtonPress(LEFT_BUTTON) == 1) letter_ID = letter_ID - 1;
        if (letter_ID == -1) letter_ID = 7;
        if (getButtonPress(RIGHT_BUTTON) == 1) letter_ID = letter_ID + 1;
        if (letter_ID >= 8) letter_ID = 0;

        if (getButtonPress(ENTER_BUTTON) == 1) letter_group = letter_group + 1;
        if (getButtonPress(ENTER_BUTTON) == 1) letter_group_ID = 0;
        if (letter_group >= 5) letter_group = 1;

```



```

if (letter_group == 1) letter_group_ID_max = 26;
if (letter_group == 2) letter_group_ID_max = 26;
if (letter_group == 3) letter_group_ID_max = 10;
if (letter_group == 4) letter_group_ID_max = 21;

rewrite = false;
if (getButtonPress(UP_BUTTON) == 1) letter_group_ID = letter_group_ID + 1;
if (getButtonPress(UP_BUTTON) == 1) rewrite = true;
if (letter_group_ID >= (letter_group_ID_max + 1)) letter_group_ID = 0;
if (getButtonPress(DOWN_BUTTON) == 1) letter_group_ID = letter_group_ID - 1;
if (getButtonPress(DOWN_BUTTON) == 1) rewrite = true;
if (letter_group_ID == -1) letter_group_ID = letter_group_ID_max;

if (rewrite == true)
{
    if (letter_group == 1) u_name[letter_ID] = letters[letter_group_ID];
    if (letter_group == 2) u_name[letter_ID] = LETTER[letter_group_ID];
    if (letter_group == 3) u_name[letter_ID] = numbers[letter_group_ID];
    if (letter_group == 4) u_name[letter_ID] = special[letter_group_ID];
}

displayBigStringAt(16, 070, "%s", karta);
if (letter_group == 1) karta = "<a>";
    if (letter_group == 2) karta = "<A>";
    if (letter_group == 3) karta = "<0>";
    if (letter_group == 4) karta = "<=>";
displayBigStringAt(120, 070, "%s", karta);

if (letter_ID == 0) displayInverseBigStringAt(16, 070, "%s", u_name[00]);
if (letter_ID == 1) displayInverseBigStringAt(28, 070, "%s", u_name[01]);
if (letter_ID == 2) displayInverseBigStringAt(40, 070, "%s", u_name[02]);
if (letter_ID == 3) displayInverseBigStringAt(52, 070, "%s", u_name[03]);
if (letter_ID == 4) displayInverseBigStringAt(64, 070, "%s", u_name[04]);
if (letter_ID == 5) displayInverseBigStringAt(76, 070, "%s", u_name[05]);
if (letter_ID == 6) displayInverseBigStringAt(88, 070, "%s", u_name[06]);
if (letter_ID == 7) displayInverseBigStringAt(100, 70, "%s", u_name[07]);
}

while((card_ins == true)&&((getTouchValue (S4) == 1) || (getButtonPress(ANY_BUTTON) == 1)))
{
    card_insert();
}

while((getTouchValue (S4) == 0)&&(card_ins == true)&&(getButtonPress(ANY_BUTTON) == 0))
{
    card_insert();
    displayBigStringAt(120, 070, "%s", "=>");
    karta = "";
    karta = karta + u_name[00];
    karta = karta + u_name[01];
    karta = karta + u_name[02];
    karta = karta + u_name[03];
    karta = karta + u_name[04];
    karta = karta + u_name[05];
    karta = karta + u_name[06];
    karta = karta + u_name[07];
    displayInverseBigStringAt(16, 070, "%s", karta);

    displayStringAt(011, 032, "%s", "For save your new username");
    displayStringAt(011, 022, "%s", "please, press ENTER button");
    displayStringAt(011, 012, "%s", "or press ANY BUTTON.      ");
}

if (getButtonPress(ANY_BUTTON) == 0)
{
    if (card_ins == true) user_ID = karta;

    if (card_ins == true) user_00 = karta;
    if (card_ins == true) playSoundFile("Start up.rsf");
}
}
}
menu_1 = "--";

```

```

    }
}

///// -----
if ((menu != "--") && (menu != "00"))
{
    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
    displayBigStringAt(10, 120, "%s", "Logged on as:");
    karta = "";
    karta = "(";
    karta = karta + menu;
    karta = karta + ")|";

    if ((scroll_num_1 == 2) && (scroll_num_2 == 0)) username_ID = username_00;
    if ((scroll_num_1 == 1) && (scroll_num_2 == 1)) username_ID = username_01;
    if ((scroll_num_1 == 2) && (scroll_num_2 == 1)) username_ID = username_02;
    if ((scroll_num_1 == 1) && (scroll_num_2 == 2)) username_ID = username_03;
    if ((scroll_num_1 == 2) && (scroll_num_2 == 2)) username_ID = username_04;
    if ((scroll_num_1 == 1) && (scroll_num_2 == 3)) username_ID = username_05;
    if ((scroll_num_1 == 2) && (scroll_num_2 == 3)) username_ID = username_06;
    if ((scroll_num_1 == 1) && (scroll_num_2 == 4)) username_ID = username_07;
    if ((scroll_num_1 == 2) && (scroll_num_2 == 4)) username_ID = username_08;
    if ((scroll_num_1 == 1) && (scroll_num_2 == 5)) username_ID = username_09;
    if ((scroll_num_1 == 2) && (scroll_num_2 == 5)) username_ID = username_10;
    if ((scroll_num_1 == 1) && (scroll_num_2 == 6)) username_ID = username_11;
    if ((scroll_num_1 == 2) && (scroll_num_2 == 6)) username_ID = username_12;
    if ((scroll_num_1 == 1) && (scroll_num_2 == 7)) username_ID = username_13;
    if ((scroll_num_1 == 2) && (scroll_num_2 == 7)) username_ID = username_14;
    if ((scroll_num_1 == 1) && (scroll_num_2 == 8)) username_ID = username_15;
    if ((scroll_num_1 == 2) && (scroll_num_2 == 8)) username_ID = username_16;

    if ((scroll_num_1 == 2) && (scroll_num_2 == 0)) card_open = 1;
    if ((scroll_num_1 == 2) && (scroll_num_2 == 1)) card_open = 2;
    if ((scroll_num_1 == 1) && (scroll_num_2 == 2)) card_open = 3;
    if ((scroll_num_1 == 2) && (scroll_num_2 == 2)) card_open = 4;
    if ((scroll_num_1 == 1) && (scroll_num_2 == 3)) card_open = 5;
    if ((scroll_num_1 == 2) && (scroll_num_2 == 3)) card_open = 6;
    if ((scroll_num_1 == 1) && (scroll_num_2 == 4)) card_open = 7;
    if ((scroll_num_1 == 2) && (scroll_num_2 == 4)) card_open = 8;
    if ((scroll_num_1 == 1) && (scroll_num_2 == 5)) card_open = 9;
    if ((scroll_num_1 == 2) && (scroll_num_2 == 5)) card_open = 10;
    if ((scroll_num_1 == 1) && (scroll_num_2 == 6)) card_open = 11;
    if ((scroll_num_1 == 2) && (scroll_num_2 == 6)) card_open = 12;
    if ((scroll_num_1 == 1) && (scroll_num_2 == 7)) card_open = 13;
    if ((scroll_num_1 == 2) && (scroll_num_2 == 7)) card_open = 14;
    if ((scroll_num_1 == 1) && (scroll_num_2 == 8)) card_open = 15;
    if ((scroll_num_1 == 2) && (scroll_num_2 == 8)) card_open = 16;

    displayBigStringAt(10, 100, "%s", username_ID);
    displayBigStringAt(04, 080, "%s", "-----");
    drawRect(8,65,168,6);
    displayInverseBigStringAt(10, 063, "%s", "Open safe    ");
    displayBigStringAt(10, 043, "%s", "Change PIN    ");
    displayBigStringAt(10, 023, "%s", "Change name   ");
    scroll_num_1 = 1;
    scroll_num_2 = 1;
    menu_1 = "";

    while ((card_ins == true) && (menu_1 != "--"))
    {
        while ((getButtonPress(ANY_BUTTON) == 1) && (card_ins == true))
        {
            card_insert();
        }
        while ((card_ins == true) && (getButtonPress(ENTER_BUTTON) == 0))
        {
            while ((getButtonPress(ANY_BUTTON) == 1) && (card_ins == true))
            {
                card_insert();
            }
            while ((getButtonPress(ANY_BUTTON) == 0) && (card_ins == true))
            {
                card_insert();
            }
        }
    }
}

```

```

    }
    setLEDColor(ledGreenFlash);
    buttons();
    playSoundFile("Click.rsf");
    if (button_ID == 4) scroll_num_2 = scroll_num_2 - 1;
    if (scroll_num_2 == 0) scroll_num_1 = scroll_num_1 - 1;
    if (scroll_num_1 == 0) scroll_num_1 = 2;
    if (scroll_num_2 == 0) scroll_num_2 = 3;

    if (button_ID == 5) scroll_num_2 = scroll_num_2 + 1;
    if (scroll_num_2 == 4) scroll_num_1 = scroll_num_1 + 1;
    if (scroll_num_1 == 3) scroll_num_1 = 1;
    if (scroll_num_2 == 4) scroll_num_2 = 1;

    if (scroll_num_1 == 1)
    {
        displayBigStringAt(10, 063, "%s", "Open safe  ");
        displayBigStringAt(10, 043, "%s", "Change PIN  ");
        displayBigStringAt(10, 023, "%s", "Change name  ");
        if (scroll_num_2 == 1) displayInverseBigStringAt(10, 063, "%s", "Open safe  ");
        if (scroll_num_2 == 2) displayInverseBigStringAt(10, 043, "%s", "Change PIN  ");
        if (scroll_num_2 == 3) displayInverseBigStringAt(10, 023, "%s", "Change name  ");
    }

    if (scroll_num_1 == 2)
    {
        displayBigStringAt(10, 063, "%s", "Block card  ");
        displayBigStringAt(10, 043, "%s", "Unblock card ");
        displayBigStringAt(10, 023, "%s", ">back to menu");
        if (scroll_num_2 == 1) displayInverseBigStringAt(10, 063, "%s", "Block card  ");
        if (scroll_num_2 == 2) displayInverseBigStringAt(10, 043, "%s", "Unblock card ");
        if (scroll_num_2 == 3) displayInverseBigStringAt(10, 023, "%s", ">back to menu");
    }

    card_insert();
}

if ((scroll_num_1 == 1)&&(scroll_num_2 == 1)) menu_1 = "01";
if ((scroll_num_1 == 1)&&(scroll_num_2 == 2)) menu_1 = "02";
if ((scroll_num_1 == 1)&&(scroll_num_2 == 3)) menu_1 = "03";
if ((scroll_num_1 == 2)&&(scroll_num_2 == 1)) menu_1 = "04";
if ((scroll_num_1 == 2)&&(scroll_num_2 == 2)) menu_1 = "05";
if ((scroll_num_1 == 2)&&(scroll_num_2 == 3)) menu_1 = "--";

while ((getButtonPress(ENTER_BUTTON) == 1)&&(card_ins == true))
{
    card_insert();
}

if ((menu_1 == "01")&&(card_ins == true))
{
    if (door_OK == true)
    {
        //x = getMotorEncoder(motorD);

        if (card_open == 01) a = 0; /*degrees - getMotorEncoder(motorD);
        if (card_open == 02) a = 2; /*degrees - getMotorEncoder(motorD);
        if (card_open == 03) a = 3; /*degrees - getMotorEncoder(motorD);
        if (card_open == 04) a = 4; /*degrees - getMotorEncoder(motorD);

        if (card_open == 05) a = 2; /*degrees - getMotorEncoder(motorD);
        if (card_open == 06) a = 0; /*degrees - getMotorEncoder(motorD);
        if (card_open == 07) a = 5; /*degrees - getMotorEncoder(motorD);
        if (card_open == 08) a = 6; /*degrees - getMotorEncoder(motorD);

        if (card_open == 09) a = 3; /*degrees - getMotorEncoder(motorD);
        if (card_open == 10) a = 5; /*degrees - getMotorEncoder(motorD);
        if (card_open == 11) a = 1; /*degrees - getMotorEncoder(motorD);
        if (card_open == 12) a = 7; /*degrees - getMotorEncoder(motorD);

        if (card_open == 13) a = 4; /*degrees - getMotorEncoder(motorD);

```

```

        if (card_open == 14) a = 6; /*degrees - getMotorEncoder(motorD);
        if (card_open == 15) a = 7; /*degrees - getMotorEncoder(motorD);
        if (card_open == 16) a = 1; /*degrees - getMotorEncoder(motorD);

        box();
        door_open();
    }

    else
    {
        door_close();
    }
}

if ((menu_1 == "02") && (card_ins == true))
{
    while((getTouchValue (S4) == 1) && (card_ins == true)) card_insert();
    setLEDColor(ledGreenFlash);
    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
    displayBigStringAt(04,90,"%s", "-----");
    displayBigStringAt(4,110, "%s", username_ID);
    displayBigStringAt(04,70,"%s", " Enter your ");
    displayBigStringAt(10,50,"%s", " new PIN ");
    drawRect(38,28,137,9);
    playSoundFile("Connect.rsff");
    setLEDColor(ledGreenFlash);
    sleep(1000);
    numID = 0;
    PIN = 0;
    num = "";
    while ((getTouchValue (S4) == 0) && (numID < 8) && (card_ins == true) && (OK_ID == true))
    {
        NoButton();
        setLEDColor(ledGreen);
        AnyButton();
        setLEDColor(ledOrange);
        num = num + "*";
        if (getTouchValue (S4) == 0) playSoundFile("Click.rsff");
        displayBigStringAt(40,26,"%s",num);
        buttons();
        NoButton();
        PIN = PIN * 10 + button_ID;
        numID = numID + 1;
        card_insert();
    }
    PIN = (PIN - button_ID)/10;
    if (numID == 8)
    {
        displayInverseBigStringAt(40,26,"%s",num);
        card_insert();
        while((getTouchValue (S4) == 0) && (card_ins == true)) card_insert();
    }
    while((getTouchValue (S4) == 1) && (card_ins == true)) card_insert();
    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
    displayBigStringAt(04,090,"%s", "-----");
    displayBigStringAt(10,110,"%s", username_ID);
    displayBigStringAt(10,70,"%s", " Repeat your ");
    displayBigStringAt(10,50,"%s", " new PIN ");
    drawRect(38,28,137,9);
    displayBigStringAt(40,26,"%s", " ");
    sleep(1000);

    numID = 0;
    PIN_repeat = 0;
    num = "";
    while ((getTouchValue (S4) == 1) && (OK_ID == true) && (card_ins == true)) card_insert();
    while ((getTouchValue (S4) == 0) && (numID < 8) && (card_ins == true) && (OK_ID == true))
    {
        NoButton();
        setLEDColor(ledGreen);

```

```

AnyButton();
num = num + "*";
if (getTouchValue (S4) == 0)   playSoundFile("Click.rsff");
setLEDColor(ledOrange);
displayBigStringAt(40,26,"%s",num);
buttons();
NoButton();
    PIN_repeat = PIN_repeat * 10 + button_ID;
    numID = numID + 1;
    card_insert();
}
PIN_repeat = (PIN_repeat - button_ID)/10;
if (numID == 8)
{
    displayInverseBigStringAt(40,26,"%s",num);
    card_insert();
    while((getTouchValue (S4) == 0)&&(card_ins == true)) card_insert();
}

if (card_ins == true)
{
    if ((PIN == PIN_repeat)&&(menu == "01")) PIN_01 = PIN;
    if ((PIN == PIN_repeat)&&(menu == "02")) PIN_02 = PIN;
    if ((PIN == PIN_repeat)&&(menu == "03")) PIN_03 = PIN;
    if ((PIN == PIN_repeat)&&(menu == "04")) PIN_04 = PIN;

    if ((PIN == PIN_repeat)&&(menu == "05")) PIN_05 = PIN;
    if ((PIN == PIN_repeat)&&(menu == "06")) PIN_06 = PIN;
    if ((PIN == PIN_repeat)&&(menu == "07")) PIN_07 = PIN;
    if ((PIN == PIN_repeat)&&(menu == "08")) PIN_08 = PIN;

    if ((PIN == PIN_repeat)&&(menu == "09")) PIN_09 = PIN;
    if ((PIN == PIN_repeat)&&(menu == "10")) PIN_10 = PIN;
    if ((PIN == PIN_repeat)&&(menu == "11")) PIN_11 = PIN;
    if ((PIN == PIN_repeat)&&(menu == "12")) PIN_12 = PIN;

    if ((PIN == PIN_repeat)&&(menu == "13")) PIN_13 = PIN;
    if ((PIN == PIN_repeat)&&(menu == "14")) PIN_14 = PIN;
    if ((PIN == PIN_repeat)&&(menu == "15")) PIN_15 = PIN;
    if ((PIN == PIN_repeat)&&(menu == "16")) PIN_16 = PIN;
}

if (PIN == PIN_repeat) PIN_ID = PIN;

if ((PIN == PIN_repeat)&&(card_ins == true))
{
    setLEDColor(ledGreenFlash);
    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
    displayBigStringAt(04,100,"%s", "-----");
displayBigStringAt(10,120,"%s", username_ID);
displayBigStringAt(4,080,"%s", " Your PIN has ");
displayBigStringAt(4,060,"%s", "   been   ");
displayBigStringAt(10,040,"%s", " successfully ");
displayBigStringAt(10,020,"%s", "   changed   ");
    playSoundFile("Start up.rsff");
    sleep(3000);
}
if ((PIN != PIN_repeat)&&(card_ins == true))
{
    setLEDColor(ledRedFlash);
    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
    displayBigStringAt(04,100,"%s", "-----");
displayBigStringAt(10,120,"%s", username_ID);
displayBigStringAt(04,080,"%s", " Entered PINs ");
displayBigStringAt(10,060,"%s", "did not match");
displayBigStringAt(10,040,"%s", " PIN has not ");
displayBigStringAt(04,020,"%s", " been changed ");
    playSoundFile("Error alarm.rsff");
    sleep(3000);
}

    menu_1 = "--";
}

if ((menu_1 == "03")&&(card_ins == true))

```

```

{
    letter_ID = 0;
    letter_group = 1;
    letter_group_ID = 0;
    playSoundFile("Click.rsf");
    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
    displayBigStringAt(04,090,"%s", "-----");
displayBigStringAt(10,110,"%s", username_ID);
    u_name[00] = "-";
    u_name[01] = "-";
    u_name[02] = "-";
    u_name[03] = "-";
    u_name[04] = "-";
    u_name[05] = "-";
    u_name[06] = "-";
    u_name[07] = "-";

    drawRect(14,72,113,53);
    displayBigStringAt(016, 070, "%s", "-----");
    displayBigStringAt(120, 070, "%s", "<A>");
    displayInverseBigStringAt(16, 070, "%s", "-");
    displayBigStringAt(004, 050, "%s", "-----");
    displayStringAt(011, 032, "%s", "Btn 1/3: ch. let. position");
    displayStringAt(011, 022, "%s", "Btn 2: change letter group");
    displayStringAt(011, 012, "%s", "Button 4/5: letter up/down");

    while((getTouchValue (S4) == 0)&&(card_ins == true))
    {
        card_insert();
        setLEDColor(ledOrange);
        while((getTouchValue (S4) == 0)&&(card_ins == true)&&(getButtonPress(ANY_BUTTON) == 1))
        {
            card_insert();
        }

        while((getTouchValue (S4) == 0)&&(card_ins == true)&&(getButtonPress(ANY_BUTTON) == 0))
        {
            card_insert();
            setLEDColor(ledGreen);
        }

        karta = "";
        karta = karta + u_name[00];
        karta = karta + u_name[01];
        karta = karta + u_name[02];
        karta = karta + u_name[03];
        karta = karta + u_name[04];
        karta = karta + u_name[05];
        karta = karta + u_name[06];
        karta = karta + u_name[07];

        if (getButtonPress(LEFT_BUTTON) == 1) letter_ID = letter_ID - 1;
        if (letter_ID == -1) letter_ID = 7;
        if (getButtonPress(RIGHT_BUTTON) == 1) letter_ID = letter_ID + 1;
        if (letter_ID >= 8) letter_ID = 0;

        if (getButtonPress(ENTER_BUTTON) == 1) letter_group = letter_group + 1;
        if (getButtonPress(ENTER_BUTTON) == 1) letter_group_ID = 0;
        if (letter_group >= 5) letter_group = 1;
        if (letter_group == 1) letter_group_ID_max = 26;
        if (letter_group == 2) letter_group_ID_max = 26;
        if (letter_group == 3) letter_group_ID_max = 10;
        if (letter_group == 4) letter_group_ID_max = 21;

        rewrite = false;
        if (getButtonPress(UP_BUTTON) == 1) letter_group_ID = letter_group_ID + 1;
        if (getButtonPress(UP_BUTTON) == 1) rewrite = true;
        if (letter_group_ID >= (letter_group_ID_max + 1)) letter_group_ID = 0;
        if (getButtonPress(DOWN_BUTTON) == 1) letter_group_ID = letter_group_ID - 1;
        if (getButtonPress(DOWN_BUTTON) == 1) rewrite = true;
        if (letter_group_ID == -1) letter_group_ID = letter_group_ID_max;

        if (rewrite == true)

```

```

{
    if (letter_group == 1) u_name[letter_ID] = letters[letter_group_ID];
    if (letter_group == 2) u_name[letter_ID] = LETTER[letter_group_ID];
    if (letter_group == 3) u_name[letter_ID] = numbers[letter_group_ID];
    if (letter_group == 4) u_name[letter_ID] = special[letter_group_ID];
}

displayBigStringAt(16, 070, "%s", karta);
if (letter_group == 1) karta = "<a>";
    if (letter_group == 2) karta = "<A>";
    if (letter_group == 3) karta = "<0>";
    if (letter_group == 4) karta = "<=>";
displayBigStringAt(120, 070, "%s", karta);

if (letter_ID == 0) displayInverseBigStringAt(16, 070, "%s", u_name[00]);
if (letter_ID == 1) displayInverseBigStringAt(28, 070, "%s", u_name[01]);
if (letter_ID == 2) displayInverseBigStringAt(40, 070, "%s", u_name[02]);
if (letter_ID == 3) displayInverseBigStringAt(52, 070, "%s", u_name[03]);
if (letter_ID == 4) displayInverseBigStringAt(64, 070, "%s", u_name[04]);
if (letter_ID == 5) displayInverseBigStringAt(76, 070, "%s", u_name[05]);
if (letter_ID == 6) displayInverseBigStringAt(88, 070, "%s", u_name[06]);
if (letter_ID == 7) displayInverseBigStringAt(100, 70, "%s", u_name[07]);
}

while((card_ins == true)&&((getTouchValue (S4) == 1) || (getButtonPress(ANY_BUTTON) == 1)))
{
    card_insert();
}

while((getTouchValue (S4) == 0)&&(card_ins == true)&&(getButtonPress(ANY_BUTTON) == 0))
{
    card_insert();
    displayBigStringAt(120, 070, "%s", "=>");
    karta = "";
    karta = karta + u_name[00];
    karta = karta + u_name[01];
    karta = karta + u_name[02];
    karta = karta + u_name[03];
    karta = karta + u_name[04];
    karta = karta + u_name[05];
    karta = karta + u_name[06];
    karta = karta + u_name[07];
    displayInverseBigStringAt(16, 070, "%s", karta);

    displayStringAt(011, 032, "%s", "For save your new username");
    displayStringAt(011, 022, "%s", "please, press ENTER button");
    displayStringAt(011, 012, "%s", "or press ANY BUTTON.      ");
}

if (getButtonPress(ANY_BUTTON) == 0)
{
    if ((card_ins == true)&&(card_read != "00")) user_ID = karta;

    if ((card_ins == true)&&(menu == "01")) user_01 = karta;
    if ((card_ins == true)&&(menu == "02")) user_02 = karta;
    if ((card_ins == true)&&(menu == "03")) user_03 = karta;
    if ((card_ins == true)&&(menu == "04")) user_04 = karta;

    if ((card_ins == true)&&(menu == "05")) user_05 = karta;
    if ((card_ins == true)&&(menu == "06")) user_06 = karta;
    if ((card_ins == true)&&(menu == "07")) user_07 = karta;
    if ((card_ins == true)&&(menu == "08")) user_08 = karta;

    if ((card_ins == true)&&(menu == "09")) user_09 = karta;
    if ((card_ins == true)&&(menu == "10")) user_10 = karta;
    if ((card_ins == true)&&(menu == "11")) user_11 = karta;
    if ((card_ins == true)&&(menu == "12")) user_12 = karta;

    if ((card_ins == true)&&(menu == "13")) user_13 = karta;
    if ((card_ins == true)&&(menu == "14")) user_14 = karta;
    if ((card_ins == true)&&(menu == "15")) user_15 = karta;
    if ((card_ins == true)&&(menu == "16")) user_16 = karta;
}

```

```

        if ((card_ins == true)&&(menu == "00")) user_00 = karta;

        if (card_ins == true) playSoundFile("Start up.rsf");
    }
    menu_1 = "--";
}

if ((menu_1 == "05")&&(card_ins == true))
{
    if (menu == "01") OK_01 = true;
    if (menu == "02") OK_02 = true;
    if (menu == "03") OK_03 = true;
    if (menu == "04") OK_04 = true;
    if (menu == "05") OK_05 = true;
    if (menu == "06") OK_06 = true;
    if (menu == "07") OK_07 = true;
    if (menu == "08") OK_08 = true;
    if (menu == "09") OK_09 = true;
    if (menu == "10") OK_10 = true;
    if (menu == "11") OK_11 = true;
    if (menu == "12") OK_12 = true;
    if (menu == "13") OK_13 = true;
    if (menu == "14") OK_14 = true;
    if (menu == "15") OK_15 = true;
    if (menu == "16") OK_16 = true;

    if (menu == "01") pmnp_01 = 3;
    if (menu == "02") pmnp_02 = 3;
    if (menu == "03") pmnp_03 = 3;
    if (menu == "04") pmnp_04 = 3;
    if (menu == "05") pmnp_05 = 3;
    if (menu == "06") pmnp_06 = 3;
    if (menu == "07") pmnp_07 = 3;
    if (menu == "08") pmnp_08 = 3;
    if (menu == "09") pmnp_09 = 3;
    if (menu == "10") pmnp_10 = 3;
    if (menu == "11") pmnp_11 = 3;
    if (menu == "12") pmnp_12 = 3;
    if (menu == "13") pmnp_13 = 3;
    if (menu == "14") pmnp_14 = 3;
    if (menu == "15") pmnp_15 = 3;
    if (menu == "16") pmnp_16 = 3;

    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
    setLEDColor(ledGreen);
    displayBigStringAt(04,110,"%s", "    Card    ");
    displayBigStringAt(10,090,"%s",username_ID);
    displayBigStringAt(04,070,"%s", " has been ");
    displayBigStringAt(04,035,"%s", "-----");
    displayBigStringAt(10,050,"%s", " unblocked ");
    displayBigStringAt(04,020,"%s", " pmnp = 3 ");
    sleep(3000);
    menu_1 = "--";
}

if ((menu_1 == "04")&&(card_ins == true))
{
    if (menu == "01") OK_01 = false;
    if (menu == "02") OK_02 = false;
    if (menu == "03") OK_03 = false;
    if (menu == "04") OK_04 = false;
    if (menu == "05") OK_05 = false;
    if (menu == "06") OK_06 = false;
    if (menu == "07") OK_07 = false;
    if (menu == "08") OK_08 = false;
    if (menu == "09") OK_10 = false;
    if (menu == "10") OK_09 = false;
    if (menu == "11") OK_11 = false;
    if (menu == "12") OK_12 = false;
    if (menu == "13") OK_13 = false;
    if (menu == "14") OK_14 = false;
    if (menu == "15") OK_15 = false;
}

```



```

        if (menu == "16") OK_16 = false;

        if (menu == "01") pmnp_01 = 0;
        if (menu == "02") pmnp_02 = 0;
        if (menu == "03") pmnp_03 = 0;
        if (menu == "04") pmnp_04 = 0;
        if (menu == "05") pmnp_05 = 0;
        if (menu == "06") pmnp_06 = 0;
        if (menu == "07") pmnp_07 = 0;
        if (menu == "08") pmnp_08 = 0;
        if (menu == "09") pmnp_09 = 0;
        if (menu == "10") pmnp_10 = 0;
        if (menu == "11") pmnp_11 = 0;
        if (menu == "12") pmnp_12 = 0;
        if (menu == "13") pmnp_13 = 0;
        if (menu == "14") pmnp_14 = 0;
        if (menu == "15") pmnp_15 = 0;
        if (menu == "16") pmnp_16 = 0;

        drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
        setLEDColor(ledRed);
        displayBigStringAt(04,110,"%s","    Card    ");
        displayBigStringAt(10,090,"%s",username_ID);
        displayBigStringAt(04,070,"%s","  has been  ");
        displayBigStringAt(04,035,"%s","-----");
        displayBigStringAt(10,050,"%s","  blocked  ");
        displayBigStringAt(04,020,"%s","  pmnp = 0  ");
        sleep(3000);

        menu_1 = "--";
    }
}

/**
}
}

if (card_read != "00")
//user menu
while (card_ins == true)
{
    while (card_ins == true)
    {
        drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
        setLEDColor(ledGreenFlash);
        karta = "User: ";
        if ((card_ins == true)&&(card_read == "01")) pmnp_01 = 3;
        if ((card_ins == true)&&(card_read == "02")) pmnp_02 = 3;
        if ((card_ins == true)&&(card_read == "03")) pmnp_03 = 3;
        if ((card_ins == true)&&(card_read == "04")) pmnp_04 = 3;
        if ((card_ins == true)&&(card_read == "05")) pmnp_05 = 3;
        if ((card_ins == true)&&(card_read == "06")) pmnp_06 = 3;
        if ((card_ins == true)&&(card_read == "07")) pmnp_07 = 3;
        if ((card_ins == true)&&(card_read == "08")) pmnp_08 = 3;
        if ((card_ins == true)&&(card_read == "09")) pmnp_09 = 3;
        if ((card_ins == true)&&(card_read == "10")) pmnp_10 = 3;
        if ((card_ins == true)&&(card_read == "11")) pmnp_11 = 3;
        if ((card_ins == true)&&(card_read == "12")) pmnp_12 = 3;
        if ((card_ins == true)&&(card_read == "13")) pmnp_13 = 3;
        if ((card_ins == true)&&(card_read == "14")) pmnp_14 = 3;
        if ((card_ins == true)&&(card_read == "15")) pmnp_15 = 3;
        if ((card_ins == true)&&(card_read == "16")) pmnp_16 = 3;
        karta = karta + user_ID;
        displayBigStringAt(04, 110, "%s", karta);
        displayBigStringAt(04, 090, "%s","-----");
        displayBigStringAt(16, 070, "%s","Open door  ");
        displayBigStringAt(16, 050, "%s","Change PIN  ");
        displayBigStringAt(16, 030, "%s","Change name ");
        if (scroll_num == 1) displayInverseBigStringAt(16, 070, "%s","Open door  ");
        if (scroll_num == 2) displayInverseBigStringAt(16, 050, "%s","Change PIN  ");
        if (scroll_num == 3) displayInverseBigStringAt(16, 030, "%s","Change name ");

        while ((getButtonPress(ANY_BUTTON) == 1)&&(card_ins == true))

```

```

    {
        card_insert();
    }
while ((getButtonPress(ANY_BUTTON) == 0)&&(card_ins == true))
    {
        card_insert();
    }
    setLEDColor(ledGreenFlash);
buttons();
playSoundFile("Click.rsf");
if (button_ID == 4) scroll_num = scroll_num - 1;
if (scroll_num == 0) scroll_num = 3;
if (button_ID == 5) scroll_num = scroll_num + 1;
if (scroll_num == 4) scroll_num = 1;

if ((button_ID == 2)&&(scroll_num == 1))
{
    if (door_OK == true)
    {
        //x = getMotorEncoder(motorD);

        if (card_read == "01") a = 0; /*degrees - getMotorEncoder(motorD);
            if (card_read == "02") a = 2; /*degrees - getMotorEncoder(motorD);
            if (card_read == "03") a = 3; /*degrees - getMotorEncoder(motorD);
            if (card_read == "04") a = 4; /*degrees - getMotorEncoder(motorD);

            if (card_read == "05") a = 2; /*degrees - getMotorEncoder(motorD);
            if (card_read == "06") a = 0; /*degrees - getMotorEncoder(motorD);
            if (card_read == "07") a = 5; /*degrees - getMotorEncoder(motorD);
            if (card_read == "08") a = 6; /*degrees - getMotorEncoder(motorD);

            if (card_read == "09") a = 3; /*degrees - getMotorEncoder(motorD);
            if (card_read == "10") a = 5; /*degrees - getMotorEncoder(motorD);
            if (card_read == "11") a = 1; /*degrees - getMotorEncoder(motorD);
            if (card_read == "12") a = 7; /*degrees - getMotorEncoder(motorD);

            if (card_read == "13") a = 4; /*degrees - getMotorEncoder(motorD);
            if (card_read == "14") a = 6; /*degrees - getMotorEncoder(motorD);
            if (card_read == "15") a = 7; /*degrees - getMotorEncoder(motorD);
            if (card_read == "16") a = 1; /*degrees - getMotorEncoder(motorD);

            box();
            door_open();
        }

        else
        {
            door_close();
        }
    }

if ((button_ID == 2)&&(scroll_num == 3))
{
    letter_ID = 0;
    letter_group = 1;
    letter_group_ID = 0;

    displayBigStringAt(16, 070, "%s", " ");
    displayBigStringAt(16, 050, "%s", " ");
    displayBigStringAt(16, 030, "%s", " ");
    u_name[00] = "-";
    u_name[01] = "-";
    u_name[02] = "-";
    u_name[03] = "-";
    u_name[04] = "-";
    u_name[05] = "-";
    u_name[06] = "-";
    u_name[07] = "-";

    drawRect(14,72,113,53);
    displayBigStringAt(016, 070, "%s", "-----");
    displayBigStringAt(120, 070, "%s", "<A>");
    displayInverseBigStringAt(16, 070, "%s", "-");

```

```

displayBigStringAt(004, 050, "%s", "-----");
displayStringAt(011, 032, "%s", "Btn 1/3: ch. let. position");
displayStringAt(011, 022, "%s", "Btn 2: change letter group");
displayStringAt(011, 012, "%s", "Button 4/5: letter up/down");

while((getTouchValue (S4) == 0)&&(card_ins == true))
{
card_insert();
setLEDColor(ledOrange);
while((getTouchValue (S4) == 0)&&(card_ins == true)&&(getButtonPress(ANY_BUTTON) == 1))
{
card_insert();

}
playSoundFile("Click.rsf");

while((getTouchValue (S4) == 0)&&(card_ins == true)&&(getButtonPress(ANY_BUTTON) == 0))
{
card_insert();
setLEDColor(ledGreen);
}

karta = "";
karta = karta + u_name[00];
karta = karta + u_name[01];
karta = karta + u_name[02];
karta = karta + u_name[03];
karta = karta + u_name[04];
karta = karta + u_name[05];
karta = karta + u_name[06];
karta = karta + u_name[07];

if (getButtonPress(LEFT_BUTTON) == 1) letter_ID = letter_ID - 1;
if (letter_ID == -1) letter_ID = 7;
if (getButtonPress(RIGHT_BUTTON) == 1) letter_ID = letter_ID + 1;
if (letter_ID >= 8) letter_ID = 0;

if (getButtonPress(ENTER_BUTTON) == 1) letter_group = letter_group + 1;
if (getButtonPress(ENTER_BUTTON) == 1) letter_group_ID = 0;
if (letter_group >= 5) letter_group = 1;
if (letter_group == 1) letter_group_ID_max = 26;
if (letter_group == 2) letter_group_ID_max = 26;
if (letter_group == 3) letter_group_ID_max = 10;
if (letter_group == 4) letter_group_ID_max = 21;

rewrite = false;
if (getButtonPress(UP_BUTTON) == 1) letter_group_ID = letter_group_ID + 1;
if (getButtonPress(UP_BUTTON) == 1) rewrite = true;
if (letter_group_ID >= (letter_group_ID_max + 1)) letter_group_ID = 0;
if (getButtonPress(DOWN_BUTTON) == 1) letter_group_ID = letter_group_ID - 1;
if (getButtonPress(DOWN_BUTTON) == 1) rewrite = true;
if (letter_group_ID == -1) letter_group_ID = letter_group_ID_max;

if (rewrite == true)
{
if (letter_group == 1) u_name[letter_ID] = letters[letter_group_ID];
if (letter_group == 2) u_name[letter_ID] = LETTER[letter_group_ID];
if (letter_group == 3) u_name[letter_ID] = numbers[letter_group_ID];
if (letter_group == 4) u_name[letter_ID] = special[letter_group_ID];
}

displayBigStringAt(16, 070, "%s", karta);
if (letter_group == 1) karta = "<a>";
if (letter_group == 2) karta = "<A>";
if (letter_group == 3) karta = "<0>";
if (letter_group == 4) karta = "<=>";
displayBigStringAt(120, 070, "%s", karta);
//displayBigStringAt(16, 060, "%d", letter_ID);
//displayBigStringAt(16, 040, "%d", letter_group);
//displayBigStringAt(16, 020, "%s", " ");
//displayBigStringAt(16, 020, "%d", letter_group_ID);

if (letter_ID == 0) displayInverseBigStringAt(16, 070, "%s", u_name[00]);

```

```

if (letter_ID == 1) displayInverseBigStringAt(28, 070, "%s", u_name[01]);
if (letter_ID == 2) displayInverseBigStringAt(40, 070, "%s", u_name[02]);
if (letter_ID == 3) displayInverseBigStringAt(52, 070, "%s", u_name[03]);
if (letter_ID == 4) displayInverseBigStringAt(64, 070, "%s", u_name[04]);
if (letter_ID == 5) displayInverseBigStringAt(76, 070, "%s", u_name[05]);
if (letter_ID == 6) displayInverseBigStringAt(88, 070, "%s", u_name[06]);
if (letter_ID == 7) displayInverseBigStringAt(100, 70, "%s", u_name[07]);
}

while((card_ins == true)&&((getTouchValue (S4) == 1) || (getButtonPress(ANY_BUTTON) == 1)))
{
    card_insert();
}

while((getTouchValue (S4) == 0)&&(card_ins == true)&&(getButtonPress(ANY_BUTTON) == 0))
{
    card_insert();
    displayBigStringAt(120, 070, "%s", "=>");
    karta = "";
    karta = karta + u_name[00];
    karta = karta + u_name[01];
    karta = karta + u_name[02];
    karta = karta + u_name[03];
    karta = karta + u_name[04];
    karta = karta + u_name[05];
    karta = karta + u_name[06];
    karta = karta + u_name[07];
    displayInverseBigStringAt(16, 070, "%s", karta);

    displayStringAt(011, 032, "%s", "For save your new username");
    displayStringAt(011, 022, "%s", "please, press ENTER button");
    displayStringAt(011, 012, "%s", "or press ANY BUTTON.      ");
}

if (getButtonPress(ANY_BUTTON) == 0)
{
    if (card_ins == true) user_ID = karta;

    if ((card_ins == true)&&(card_read == "01")) user_01 = karta;
    if ((card_ins == true)&&(card_read == "02")) user_02 = karta;
    if ((card_ins == true)&&(card_read == "03")) user_03 = karta;
    if ((card_ins == true)&&(card_read == "04")) user_04 = karta;

    if ((card_ins == true)&&(card_read == "05")) user_05 = karta;
    if ((card_ins == true)&&(card_read == "06")) user_06 = karta;
    if ((card_ins == true)&&(card_read == "07")) user_07 = karta;
    if ((card_ins == true)&&(card_read == "08")) user_08 = karta;

    if ((card_ins == true)&&(card_read == "09")) user_09 = karta;
    if ((card_ins == true)&&(card_read == "10")) user_10 = karta;
    if ((card_ins == true)&&(card_read == "11")) user_11 = karta;
    if ((card_ins == true)&&(card_read == "12")) user_12 = karta;

    if ((card_ins == true)&&(card_read == "13")) user_13 = karta;
    if ((card_ins == true)&&(card_read == "14")) user_14 = karta;
    if ((card_ins == true)&&(card_read == "15")) user_15 = karta;
    if ((card_ins == true)&&(card_read == "16")) user_16 = karta;

    if (card_ins == true) playSoundFile("Start up.rsf");
    if (card_ins == true) karta = "User: ";
}
}

if ((button_ID == 2)&&(scroll_num == 2))
{
    numID = 0;
    num = "";
    PIN = 0;
    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
    displayBigStringAt(4,110, "%s", karta);
    displayBigStringAt(10,90,"%s", "Please, enter");
    displayBigStringAt(04,70,"%s", " your current ");
    displayBigStringAt(10,50,"%s", "      PIN      ");
}

```

```

drawRect(38,28,137,9);
while ((getTouchValue (S4) == 0)&&(numID < 8)&&(card_ins == true)&&(OK_ID == true))
{
    NoButton();
    setLEDColor(ledOrange);
    AnyButton();
    setLEDColor(ledGreen);
    num = num + "*";
    if (getTouchValue (S4) == 0)    playSoundFile("Click.rsf");
    setLEDColor(ledOrange);
    displayBigStringAt(40,26,"%s",num);
    buttons();
    NoButton();
    PIN = PIN * 10 + button_ID;
    numID = numID + 1;
    card_insert();
}
PIN = (PIN - button_ID)/10;
if (numID == 8)
{
    displayInverseBigStringAt(40,26,"%s",num);
    card_insert();
    while((getTouchValue (S4) == 0)&&(card_ins == true)) card_insert();
}

if ((PIN != PIN_ID)&&(card_ins == true))
{
    card_ins = false;
    setLEDColor(ledRedFlash);
    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
displayBigStringAt(4,110, "%s", karta);
displayBigStringAt(4,90,"%s", "-----");
displayBigStringAt(10,70,"%s", " Entered PIN ");
displayBigStringAt(10,50,"%s", " is not your ");
displayBigStringAt(10,30,"%s", " current PIN ");
playSoundFile("Error alarm.rsf");
sleep(2000);
}
if ((PIN == PIN_ID)&&(card_ins == true))
{
    while((getTouchValue (S4) == 1)&&(card_ins == true)) card_insert();
    setLEDColor(ledGreenFlash);
    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
displayBigStringAt(4,110, "%s", karta);
displayBigStringAt(04,90,"%s", "-----");
displayBigStringAt(04,70,"%s", " Enter your ");
displayBigStringAt(10,50,"%s", " new PIN ");
drawRect(38,28,137,9);
playSoundFile("Connect.rsf");
setLEDColor(ledGreenFlash);
sleep(1000);
numID = 0;
PIN = 0;
num = "";
while ((getTouchValue (S4) == 0)&&(numID < 8)&&(card_ins == true)&&(OK_ID == true))
{
    NoButton();
    setLEDColor(ledGreen);
    AnyButton();
    setLEDColor(ledOrange);
    num = num + "*";
    if (getTouchValue (S4) == 0)    playSoundFile("Click.rsf");
    displayBigStringAt(40,26,"%s",num);
    buttons();
    NoButton();
    PIN = PIN * 10 + button_ID;
    numID = numID + 1;
    card_insert();
}
PIN = (PIN - button_ID)/10;
if (numID == 8)
{
    displayInverseBigStringAt(40,26,"%s",num);
    card_insert();
}

```

```

        while((getTouchValue (S4) == 0)&&(card_ins == true)) card_insert();
    }
    while((getTouchValue (S4) == 1)&&(card_ins == true)) card_insert();
    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
displayBigStringAt(4,110, "%s", karta);
displayBigStringAt(4,90,"%s", "-----");
displayBigStringAt(10,70,"%s", " Repeat your ");
displayBigStringAt(10,50,"%s", " new PIN ");
drawRect(38,28,137,9);
displayBigStringAt(40,26,"%s", " ");
    sleep(1000);

numID = 0;
PIN_repeat = 0;
num = "";
while ((getTouchValue (S4) == 1)&&(OK_ID == true)&&(card_ins == true)) card_insert();
while ((getTouchValue (S4) == 0)&&(numID < 8)&&(card_ins == true)&&(OK_ID == true))
    {
        NoButton();
        setLEDColour(ledGreen);
        AnyButton();
        num = num + "*";
        if (getTouchValue (S4) == 0) playSoundFile("Click.rsf");
        setLEDColour(ledOrange);
        displayBigStringAt(40,26,"%s",num);
        buttons();
        NoButton();
        PIN_repeat = PIN_repeat * 10 + button_ID;
        numID = numID + 1;
        card_insert();
    }
    PIN_repeat = (PIN_repeat - button_ID)/10;
    if (numID == 8)
    {
        displayInverseBigStringAt(40,26,"%s",num);
        card_insert();
        while((getTouchValue (S4) == 0)&&(card_ins == true)) card_insert();
    }

    if (card_ins == true)
    {
        if ((PIN == PIN_repeat)&&(card_read == "01")) PIN_01 = PIN;
        if ((PIN == PIN_repeat)&&(card_read == "02")) PIN_02 = PIN;
        if ((PIN == PIN_repeat)&&(card_read == "03")) PIN_03 = PIN;
        if ((PIN == PIN_repeat)&&(card_read == "04")) PIN_04 = PIN;

        if ((PIN == PIN_repeat)&&(card_read == "05")) PIN_05 = PIN;
        if ((PIN == PIN_repeat)&&(card_read == "06")) PIN_06 = PIN;
        if ((PIN == PIN_repeat)&&(card_read == "07")) PIN_07 = PIN;
        if ((PIN == PIN_repeat)&&(card_read == "08")) PIN_08 = PIN;

        if ((PIN == PIN_repeat)&&(card_read == "09")) PIN_09 = PIN;
        if ((PIN == PIN_repeat)&&(card_read == "10")) PIN_10 = PIN;
        if ((PIN == PIN_repeat)&&(card_read == "11")) PIN_11 = PIN;
        if ((PIN == PIN_repeat)&&(card_read == "12")) PIN_12 = PIN;

        if ((PIN == PIN_repeat)&&(card_read == "13")) PIN_13 = PIN;
        if ((PIN == PIN_repeat)&&(card_read == "14")) PIN_14 = PIN;
        if ((PIN == PIN_repeat)&&(card_read == "15")) PIN_15 = PIN;
        if ((PIN == PIN_repeat)&&(card_read == "16")) PIN_16 = PIN;
    }

    if (PIN == PIN_repeat) PIN_ID = PIN;

    if ((PIN == PIN_repeat)&&(card_ins == true))
    {
        setLEDColour(ledGreenFlash);
        drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
displayBigStringAt(4,115, "%s", karta);
displayBigStringAt(04,100,"%s", "-----");
displayBigStringAt(4,080,"%s", " Your PIN has ");
displayBigStringAt(4,060,"%s", " been ");
displayBigStringAt(10,040,"%s", " successfully ");

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        displayBigStringAt(10,020,"%s"," changed ");
        playSoundFile("Start up.rsrf");
        sleep(3000);
    }
    if ((PIN != PIN_repeat)&&(card_ins == true))
    {
        setLEDColour(ledRedFlash);
        drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
        displayBigStringAt(10,120,"%s", karta);
        displayBigStringAt(04,100,"%s", "-----");
        displayBigStringAt(04,080,"%s"," Entered PINs ");
        displayBigStringAt(10,060,"%s","did not match");
        displayBigStringAt(10,040,"%s"," PIN has not ");
        displayBigStringAt(04,020,"%s"," been changed ");
        playSoundFile("Error alarm.rsrf");
        sleep(3000);
    }
}

}

}

card_insert();
}
}
}

if ((PIN_ID != PIN)&&(card_ins == true))
{
    playSoundFile("Error alarm.rsrf");
    setLEDColour(ledRedFlash);
    drawBmpfile(0,127,"/home/root/lms2012/prjs/clear_display.rgf");
    displayBigStringAt(10,110,"%s", " Entered PIN ");
    displayBigStringAt(04,90,"%s", " is incorrect ");
    displayBigStringAt(04,70,"%s", "-----");
    displayBigStringAt(04,30,"%s", "attempt/s left");

//displayBigStringAt(10,50,"%s", "left");
//drawRect(40,28,139,9);
}

if ((card_read == "01")&&(PIN_ID != PIN)&&(card_ins == true)) pmnp_01 = pmnp_01 - 1;
if ((card_read == "02")&&(PIN_ID != PIN)&&(card_ins == true)) pmnp_02 = pmnp_02 - 1;
if ((card_read == "03")&&(PIN_ID != PIN)&&(card_ins == true)) pmnp_03 = pmnp_03 - 1;
if ((card_read == "04")&&(PIN_ID != PIN)&&(card_ins == true)) pmnp_04 = pmnp_04 - 1;

if ((card_read == "05")&&(PIN_ID != PIN)&&(card_ins == true)) pmnp_05 = pmnp_05 - 1;
if ((card_read == "06")&&(PIN_ID != PIN)&&(card_ins == true)) pmnp_06 = pmnp_06 - 1;
if ((card_read == "07")&&(PIN_ID != PIN)&&(card_ins == true)) pmnp_07 = pmnp_07 - 1;
if ((card_read == "08")&&(PIN_ID != PIN)&&(card_ins == true)) pmnp_08 = pmnp_08 - 1;

if ((card_read == "09")&&(PIN_ID != PIN)&&(card_ins == true)) pmnp_09 = pmnp_09 - 1;
if ((card_read == "10")&&(PIN_ID != PIN)&&(card_ins == true)) pmnp_10 = pmnp_10 - 1;
if ((card_read == "11")&&(PIN_ID != PIN)&&(card_ins == true)) pmnp_11 = pmnp_11 - 1;
if ((card_read == "12")&&(PIN_ID != PIN)&&(card_ins == true)) pmnp_12 = pmnp_12 - 1;

if ((card_read == "13")&&(PIN_ID != PIN)&&(card_ins == true)) pmnp_13 = pmnp_13 - 1;
if ((card_read == "14")&&(PIN_ID != PIN)&&(card_ins == true)) pmnp_14 = pmnp_14 - 1;
if ((card_read == "15")&&(PIN_ID != PIN)&&(card_ins == true)) pmnp_15 = pmnp_15 - 1;
if ((card_read == "16")&&(PIN_ID != PIN)&&(card_ins == true)) pmnp_16 = pmnp_16 - 1;

if ((card_read == "01")&&(PIN_ID != PIN)) displayBigStringAt(82 ,50,"%d",pmnp_01);
if ((card_read == "02")&&(PIN_ID != PIN)) displayBigStringAt(82 ,50,"%d",pmnp_02);
if ((card_read == "03")&&(PIN_ID != PIN)) displayBigStringAt(82 ,50,"%d",pmnp_03);
if ((card_read == "04")&&(PIN_ID != PIN)) displayBigStringAt(82 ,50,"%d",pmnp_04);

if ((card_read == "05")&&(PIN_ID != PIN)) displayBigStringAt(82 ,50,"%d",pmnp_05);
if ((card_read == "06")&&(PIN_ID != PIN)) displayBigStringAt(82 ,50,"%d",pmnp_06);
if ((card_read == "07")&&(PIN_ID != PIN)) displayBigStringAt(82 ,50,"%d",pmnp_07);
if ((card_read == "08")&&(PIN_ID != PIN)) displayBigStringAt(82 ,50,"%d",pmnp_08);

if ((card_read == "09")&&(PIN_ID != PIN)) displayBigStringAt(82 ,50,"%d",pmnp_09);

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if ((card_read == "10")&&(PIN_ID != PIN)) displayBigStringAt(82,50,"%d",pmnp_10);
if ((card_read == "11")&&(PIN_ID != PIN)) displayBigStringAt(82,50,"%d",pmnp_11);
if ((card_read == "12")&&(PIN_ID != PIN)) displayBigStringAt(82,50,"%d",pmnp_12);

if ((card_read == "13")&&(PIN_ID != PIN)) displayBigStringAt(82,50,"%d",pmnp_13);
if ((card_read == "14")&&(PIN_ID != PIN)) displayBigStringAt(82,50,"%d",pmnp_14);
if ((card_read == "15")&&(PIN_ID != PIN)) displayBigStringAt(82,50,"%d",pmnp_15);
if ((card_read == "16")&&(PIN_ID != PIN)) displayBigStringAt(82,50,"%d",pmnp_16);

if ((PIN_ID != PIN)&&(OK_ID == true)&&(card_ins == true)) sleep(2000);
if ((PIN_ID != PIN)&&(OK_ID == true)&&(card_ins == true)) card_ins = false;

if (pmnp_01 == 0) OK_01 = false;
if (pmnp_02 == 0) OK_02 = false;
if (pmnp_03 == 0) OK_02 = false;
if (pmnp_04 == 0) OK_04 = false;

if (pmnp_05 == 0) OK_05 = false;
if (pmnp_06 == 0) OK_06 = false;
if (pmnp_07 == 0) OK_07 = false;
if (pmnp_08 == 0) OK_08 = false;

if (pmnp_09 == 0) OK_09 = false;
if (pmnp_10 == 0) OK_10 = false;
if (pmnp_11 == 0) OK_11 = false;
if (pmnp_12 == 0) OK_12 = false;

if (pmnp_13 == 0) OK_13 = false;
if (pmnp_14 == 0) OK_14 = false;
if (pmnp_15 == 0) OK_15 = false;
if (pmnp_16 == 0) OK_16 = false;

if ((card_read == "01")&&(PIN_ID != PIN)&&(OK_01 == false)) blocked();
if ((card_read == "02")&&(PIN_ID != PIN)&&(OK_02 == false)) blocked();
if ((card_read == "03")&&(PIN_ID != PIN)&&(OK_03 == false)) blocked();
if ((card_read == "04")&&(PIN_ID != PIN)&&(OK_04 == false)) blocked();

if ((card_read == "05")&&(PIN_ID != PIN)&&(OK_05 == false)) blocked();
if ((card_read == "06")&&(PIN_ID != PIN)&&(OK_06 == false)) blocked();
if ((card_read == "07")&&(PIN_ID != PIN)&&(OK_07 == false)) blocked();
if ((card_read == "08")&&(PIN_ID != PIN)&&(OK_08 == false)) blocked();

if ((card_read == "09")&&(PIN_ID != PIN)&&(OK_09 == false)) blocked();
if ((card_read == "10")&&(PIN_ID != PIN)&&(OK_10 == false)) blocked();
if ((card_read == "11")&&(PIN_ID != PIN)&&(OK_11 == false)) blocked();
if ((card_read == "12")&&(PIN_ID != PIN)&&(OK_12 == false)) blocked();

if ((card_read == "13")&&(PIN_ID != PIN)&&(OK_13 == false)) blocked();
if ((card_read == "14")&&(PIN_ID != PIN)&&(OK_14 == false)) blocked();
if ((card_read == "15")&&(PIN_ID != PIN)&&(OK_15 == false)) blocked();
if ((card_read == "16")&&(PIN_ID != PIN)&&(OK_16 == false)) blocked();

while(card_ins == true) card_insert();

//--

if (card_read != card_ID) setLEDColor(ledRedFlash);
if (card_ins == false)
//card removed
{
    playSoundFile("Power down.rsfl");
    drawBmpfile(0,127,"/home/root/lms2012/prjs/removed_card.rgf");

    displayBigStringAt(4, 100, "%s", " Card has ");
    displayBigStringAt(4, 080, "%s", " been removed ");
    if (door_OK == false) door_close();
    sleep(2000);
    setLEDColor(ledGreenFlash);
}

```


}
}
}