SMART DOOR

LOCK

SUBMITED BY,

AJAY KRISHNAN J

961819106004

**B12-6A2E**

# **DESCRIPTION :**

Smart door lock using Arduino board with tinkerhub.

# **COMPONENTS :**

1.Bread Board

2.Ardiuno UNO R3

3.Potentiometer

4.LCD Display

5.Micro Servo Motor

6.Keypad

# **PROGRAM :**

#include <Keypad.h>

#include <LiquidCrystal.h>

#include <Servo.h>

Servo myservo;

LiquidCrystal lcd(A0, A1, A2, A3, A4, A5);

#define Password\_Lenght 7 // Give enough room for six chars + NULL char

int pos = 0; // variable to store the servo position

char Data[Password\_Lenght]; // 6 is the number of chars it can hold + the null char = 7

char Master[Password\_Lenght] = "123456";

byte data\_count = 0, master\_count = 0;

bool Pass\_is\_good;

char customKey;

const byte ROWS = 4;

const byte COLS = 3;

char keys[ROWS][COLS] = {

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

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

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

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

};

bool door = true;

byte rowPins[ROWS] = {1, 2, 3, 4}; //connect to the row pinouts of the keypad

byte colPins[COLS] = {5, 6, 7}; //connect to the column pinouts of the keypad

Keypad customKeypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS); //initialize an instance of class NewKeypad

void setup()

{

myservo.attach(9);

ServoClose();

lcd.begin(16, 2);

lcd.print(" Arduino Door");

lcd.setCursor(0, 1);

lcd.print("--ENTER PASSWORD--");

delay(3000);

lcd.clear();

}

void loop()

{

if (door == 0)

{

customKey = customKeypad.getKey();

if (customKey == '#')

{

lcd.clear();

ServoClose();

lcd.print(" Door is close");

delay(3000);

door = 1;

}

}

else Open();

}

void clearData()

{

while (data\_count != 0)

{ // This can be used for any array size,

Data[data\_count--] = 0; //clear array for new data

}

return;

}

void ServoOpen()

{

for (pos = 180; pos >= 0; pos -= 5) { // goes from 0 degrees to 180 degrees

// in steps of 1 degree

myservo.write(pos); // tell servo to go to position in variable 'pos'

delay(15); // waits 15ms for the servo to reach the position

}

}

void ServoClose()

{

for (pos = 0; pos <= 180; pos += 5) { // goes from 180 degrees to 0 degrees

myservo.write(pos); // tell servo to go to position in variable 'pos'

delay(15); // waits 15ms for the servo to reach the position

}

}

void Open()

{

lcd.setCursor(0, 0);

lcd.print("SMART LOCK");

customKey = customKeypad.getKey();

if (customKey) // makes sure a key is actually pressed, equal to (customKey != NO\_KEY)

{

Data[data\_count] = customKey; // store char into data array

lcd.setCursor(data\_count, 1); // move cursor to show each new char

lcd.print(Data[data\_count]); // print char at said cursor

data\_count++; // increment data array by 1 to store new char, also keep track of the number of chars entered

}

if (data\_count == Password\_Lenght - 1) // if the array index is equal to the number of expected chars, compare data to master

{

if (!strcmp(Data, Master)) // equal to (strcmp(Data, Master) == 0)

{

lcd.clear();

ServoOpen();

lcd.print(" Door is Open");

door = 0;

}

else

{

lcd.clear();

lcd.print(" Wrong Password");

delay(1000);

door = 1;

}

clearData();

}

}

# **CIRCUIT DIAGRAM :**

# 

# THANK YOU

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