Q) Design a password-based security door using Keypad, LCD, Servo motor and Arduino. Set the password which will be your SID on entering the right password through keypad rotate servo motor from 0 to 180 degree and after some delay it will rotate back to 0 degree. On entering wrong passwords show the message "password is incorrect try again" on LCD.

**CODE:**

*#include <Keypad.h>*

*#include <LiquidCrystal.h>*

*#include <Servo.h>*

*Servo myservo;*

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

*#define Password\_Length 6*

*int pos = 0;*

*char Data[Password\_Length];*

*char Master[Password\_Length] = "63758";*

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

*char customKey;*

*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 wing = true;*

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

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

*Keypad customKeypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS);*

*void setup(){*

*lcd.begin(16,2);*

*myservo.attach(8);*

*myservo.write(0);*

*}*

*void loop(){*

*if (wing == 0){*

*customKey = customKeypad.getKey();{*

*lcd.clear();*

*ServoClose();*

*}*

*}*

*else Open();*

*}*

*void clearData(){*

*while (data\_count != 0){*

*Data[data\_count--] = 0;*

*}*

*return;*

*}*

*void ServoOpen(){*

*for (pos = 0; pos <= 180; pos += 5){*

*myservo.write(pos);*

*delay(15);*

*}*

*}*

*void ServoClose(){*

*for (pos <= 180; pos = 0; pos -= 5){*

*myservo.write(pos);*

*delay(15);*

*}*

*}*

*void Open(){*

*lcd.setCursor(0, 0);*

*lcd.print("Enter Password:");*

*customKey = customKeypad.getKey();*

*if (customKey){*

*Data[data\_count] = customKey;*

*lcd.setCursor(data\_count, 1);*

*lcd.print(Data[data\_count]);*

*data\_count++;*

*}*

*if (data\_count == Password\_Length - 1){*

*if (!strcmp(Data, Master)){*

*delay(1000);*

*lcd.clear();*

*ServoOpen();*

*lcd.print("Rotate");*

*wing = 0;*

*delay(1000);*

*pos = 0;*

*myservo.write(pos);*

*}*

*else{*

*delay(1000);*

*lcd.clear();*

*lcd.setCursor(0,0);*

*lcd.print("PasswordIsWrong");*

*lcd.setCursor(0,1);*

*lcd.print("Try Again");*

*delay(1000);*

*lcd.clear();*

*}*

*clearData();*

*}*

*}*