NAME: Ali Salman Hassan.
S-ID: 63758.
C-ID: 105139.

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'},
```

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```
{'*','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();


    }


  }
```

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```
  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(){
```

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```
  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)){
```

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```
    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();

}
```

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}