IBM - Nallaiya Thiran Project

Assigment 1

Industry-specific Intelligent Fire Management System

Source Code :

```
#include <Servo.h>

int output1Value = 0;

int sen1Value = 0;

int sen2Value = 0;

int const gas_sensor = A1;

int const LDR = A0;

int limit = 400;

long readUltrasonicDistance(int triggerPin, int echoPin)

{

  pinMode(triggerPin, OUTPUT);

  digitalWrite(triggerPin, LOW);

  delayMicroseconds(2);

  digitalWrite(triggerPin, HIGH);

  delayMicroseconds(10);

  digitalWrite(triggerPin, LOW);

  pinMode(echoPin, INPUT);

    return pulseIn(echoPin, HIGH);

}

Servo servo_7;

void setup()
```

```
{
  Serial.begin(9600);
 pinMode(A0, INPUT);
 pinMode(A1,INPUT);
 pinMode(13, OUTPUT);
 servo_7.attach(7, 500, 2500);
 pinMode(8,OUTPUT);
 pinMode(9, INPUT);
 pinMode(10, OUTPUT);
 pinMode(4, OUTPUT);
 pinMode(3, OUTPUT);
}
void loop()
{
    int val1 = analogRead(LDR);
 if (val1 > 500)
          {
          digitalWrite(13, LOW);
   Serial.print("Bulb ON = ");
   Serial.print(val1);
          }
 else
          {
          digitalWrite(13, HIGH);
    Serial.print("Bulb OFF = ");
   Serial.print(val1);
```

```
        }
  sen2Value = digitalRead(9);
  if (sen2Value == 0)
        {
        digitalWrite(10, LOW);
        digitalWrite(4, HIGH);
        digitalWrite(3, LOW);
   Serial.print("     || NO Motion Detected    " );
        }
  if (sen2Value == 1)
        {
        digitalWrite(10, HIGH);
   delay(5000);
        digitalWrite(4, LOW);
        digitalWrite(3, HIGH);
    Serial.print("               || Motion Detected!      " );
        }
  int val = analogRead(gas_sensor);
  Serial.print("|| Gas Sensor Value = ");
  Serial.print(val);
//val = map(val, 300, 750, 0, 100);
  if (val > limit)
        {
        tone(8, 650);
        }
        delay(300);
```

```
        noTone(8);
  sen1Value = 0.01723 * readUltrasonicDistance(6, 6);
  if (sen1Value < 100)
        {
        servo_7.write(90);
    Serial.print("   || Door Open!  ; Distance = ");
    Serial.print(sen1Value);
   Serial.print("\n");
        }
  else
        {
        servo_7.write(0);
    Serial.print("   || Door Closed! ; Distance =  ");
    Serial.print(sen1Value);
    Serial.print("\n");
  }
  delay(10);
}
```

Circuit Diagram :