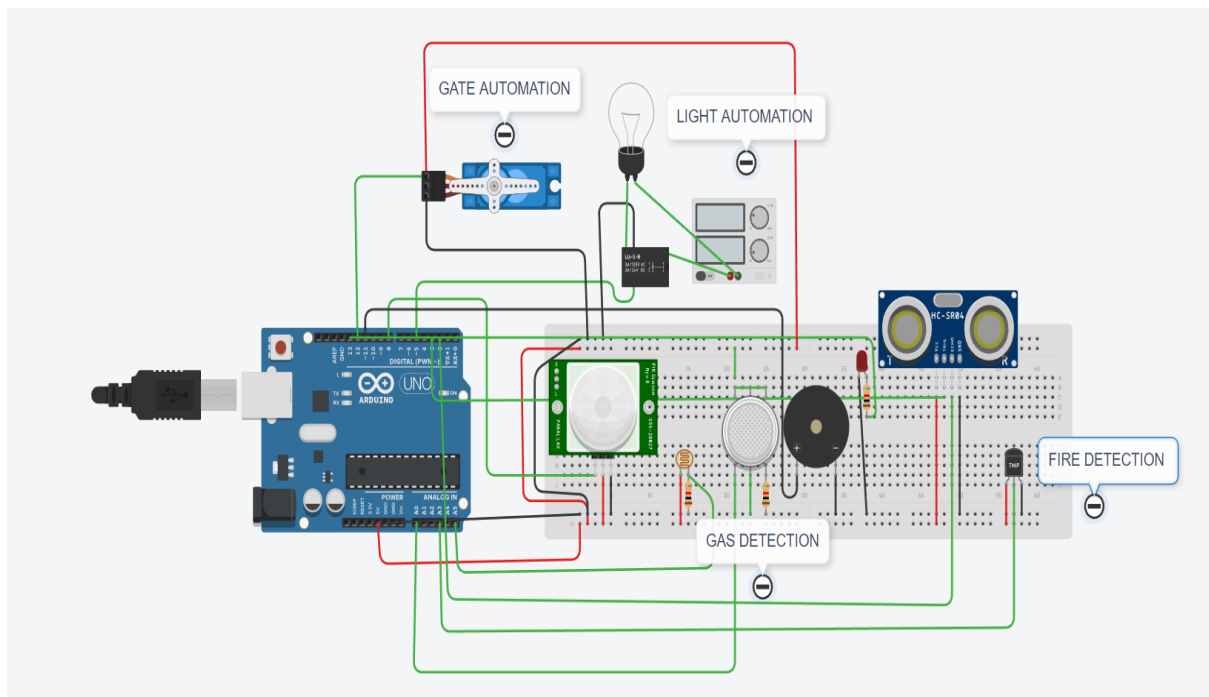**AKSHAY K P**

2019504506

HOME AUTOMATION- ASSIGNMENT 1

CIRCUIT DIAGRAM

Sensors used
- Temperature Sensor
- Passive Infrared Sensor
- Ultrasonic Sensor
- Gas sensor

CODE

```
#include<Servo.h>

Servo s;

int trig=3;

int ec=2;

int led_pin=13;

int buzz_pin;

void setup()

{

pinMode(8,INPUT);

pinMode(5,OUTPUT);

pinMode(A5,INPUT);

pinMode(11,OUTPUT);

pinMode(13,OUTPUT);

pinMode(trig,OUTPUT);

pinMode(ec,INPUT);

  s.attach(12);

  s.write(0);

Serial.begin(9600);

}

void loop()

{/*LIGHT AUTOMATION*/

  float x,y;

  x= digitalRead(8);

  y= analogRead(A5);

  if ( (x>0) && (y<500))

  { digitalWrite(5,HIGH);

   Serial.println("BULB ON");
```

```
 delay (10000);

  Serial.println("BULB OFF");

 }

 else

  digitalWrite(5,0);



/*GAS DECTECTION*/

 int a,b;

 a=analogRead(A0);

 b=map(a,0,1023,0,255);

 Serial.println(b);

 if(b>70)

 {analogWrite(buzz_pin,50);

  digitalWrite(13,HIGH);

  delay(300);

  analogWrite(buzz_pin,0);

  digitalWrite(led_pin,LOW);

  delay(300);

  analogWrite(buzz_pin,50);

  digitalWrite(led_pin,HIGH);

  Serial.println("Smoke detected");

 }

 else

  analogWrite(buzz_pin,0);



/*automatic gate control*/

digitalWrite(trig,LOW);

digitalWrite(trig,HIGH);

delayMicroseconds(10);
```

```
digitalWrite(trig,LOW);

float duration;

duration=pulseIn(ec,HIGH);

float dist;

dist=(duration*0.0343)/2;

if(dist<75)

{for(int i=0;i<=90;i=i+10)

 {s.write(i);

  delay(50);


 }

 delay(10000);

 for(int j=90;j>=0;j--)

 {s.write(j);

  delay(50);

 }

 }


/*fire alert based on temperature*/

double f=analogRead(A3);

double t=(((f/1024)*5)-0.5)*100;

if(t>70)

{digitalWrite(led_pin,HIGH);

 analogWrite(buzz_pin,50);

 delay(200);

 analogWrite(buzz_pin,50);

  digitalWrite(led_pin,LOW);

 delay(200);  }}
```