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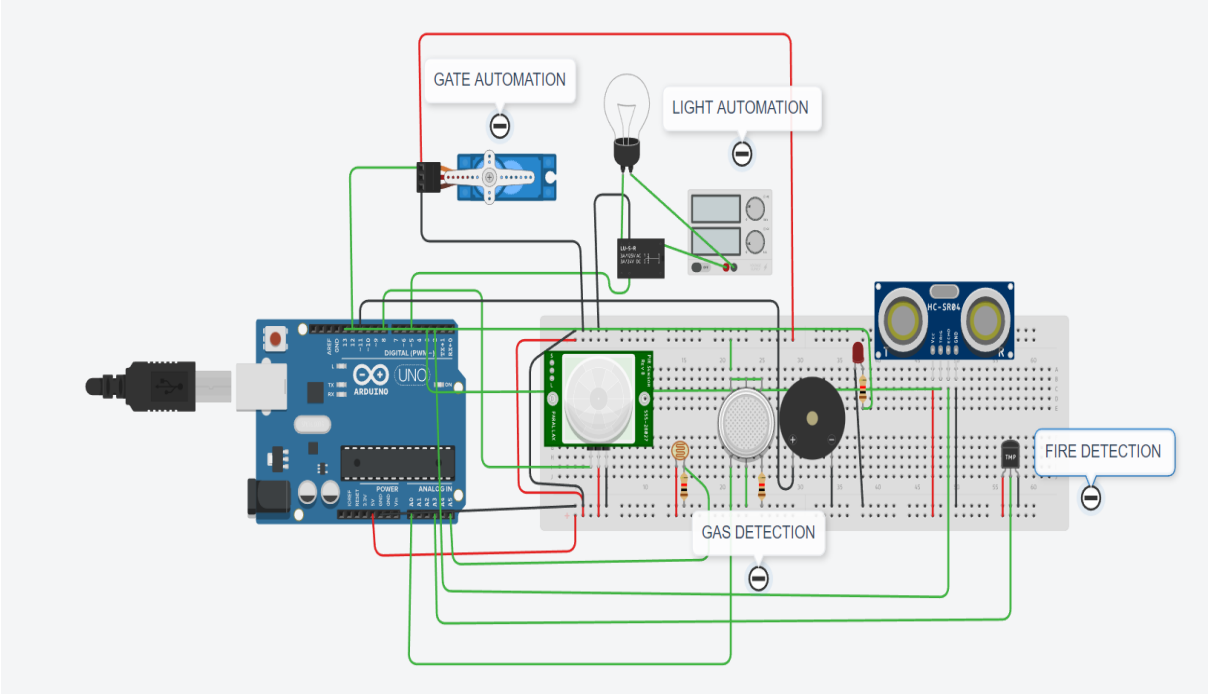
2019504018

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);  }}
```