

## Assignment –1

### Home Automation using Tinkercad

Date	9 September 2022
Student name	R. SASIREKHA
Student register no	212619106004
Maximum Marks	2 Marks

### Question – 1

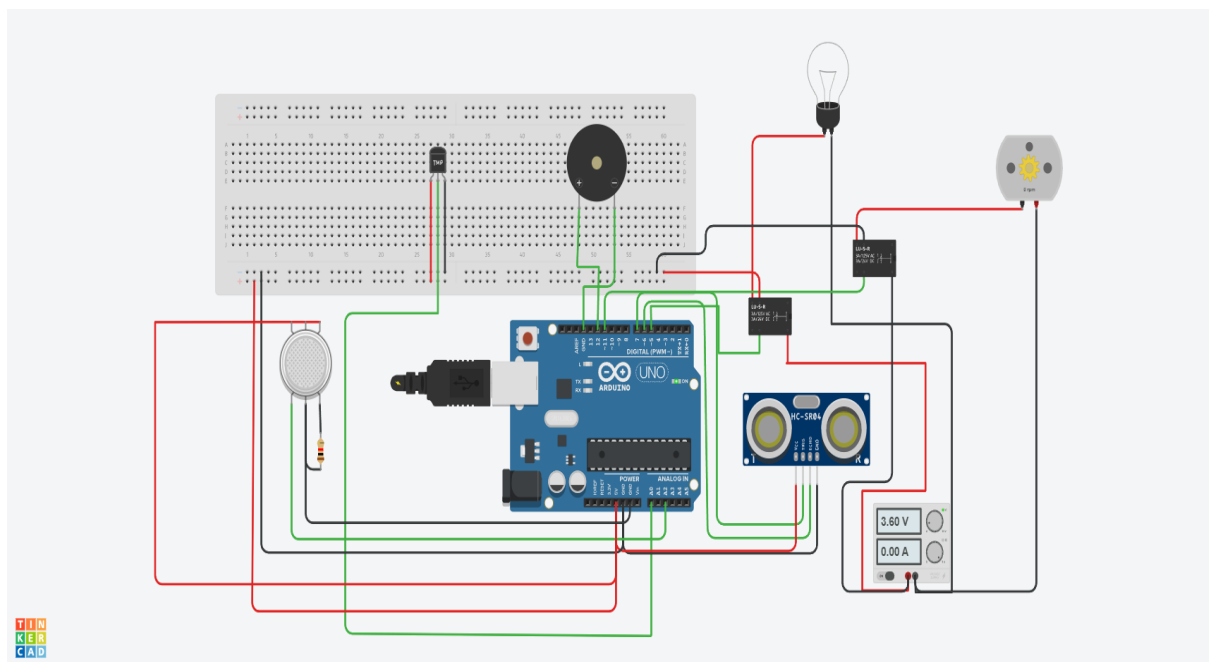
Make a home automation with Tinkercad, add 2 – 3 sensors, led, buzzers and make a common code and circuit, multiple detections and alarms should be given.

### Solution:

#### Simulation link:

<https://www.tinkercad.com/things/g8oQO6FQ1za-tremendous-bombul/editel?sharecode=0kECHmXZkGn8dkwQ-InbIYW-nJmKh4mT3o7eCk3upbl>

#### Circuit :



**Code:**

```
#define gas A2
#define tmp A0
#define trig 7
#define echo 6
#define buz 12
#define bulb 5
#define motor 11

float gas_val = 0;
double tmp_val = 0;
float distance = 0;

void setup()
{
    Serial.begin(9600);

    pinMode(echo,INPUT);
    pinMode(trig,OUTPUT);
    pinMode(bulb,OUTPUT);
    pinMode(motor,OUTPUT);
    pinMode(buz,OUTPUT);
}

void loop()
{
    gas_val = analogRead(A2);
    Serial.print(" gas value : ");
    Serial.println(gas_val);
    if (gas_val > 200)
    {
        digitalWrite(buz,HIGH);
        Serial.println("gas detected");
    }
    else
    {
```

```
digitalWrite(buz,LOW);  
Serial.println("gas not detected");  
}
```

```
digitalWrite(trig,LOW);  
digitalWrite(trig,HIGH);  
delayMicroseconds(10);  
digitalWrite(trig,LOW);  
float dur = pulseIn(echo,HIGH);  
distance = (dur * 0.0343)/2;  
Serial.print("Distance: ");  
Serial.println(distance);
```

```
if (distance < 200)  
{  
    digitalWrite(bulb,HIGH);  
    Serial.println("light is on");  
}  
else  
{  
    digitalWrite(bulb,LOW);  
    Serial.println("light is off");  
}
```

```
double t = analogRead(A0);  
tmp_val = (((t/1024)*5)-0.5)*100;  
Serial.print(" temperature : ");  
Serial.println(tmp_val);
```

```
if (tmp_val > 70)  
{  
    digitalWrite(motor,HIGH);  
    Serial.print("window opened");  
}
```

```
else
{
    digitalWrite(motor,LOW);
    Serial.println("window closed");
}
delay(500);

}
```