

## **Assignment -1**

### **SMART HOME IN TINKERCAD**

Assignment Date	16 September 2022
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Maximum Marks	2 Marks

#### **Question :**

Make a Smart home in Tinkercad, using 2+ sensors, LED ,Buzzer in single code and circuit.

#### **Solution:**

- In this project two sensors (ultrasonic and gas sensors) are used.
- Ultrasonic sensor is used to detect the person entering the home and it switches on the led.
- Gas sensor is used to detect any gas leakage in the home.
- Buzzer is used to alert the person about the gas leakage.

#### **Code:**

```
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);
}
int val=A0;
void setup()
{
    pinMode(12, OUTPUT);
    pinMode (9,OUTPUT);
    pinMode (A0,INPUT);
    Serial.begin(9600);
}

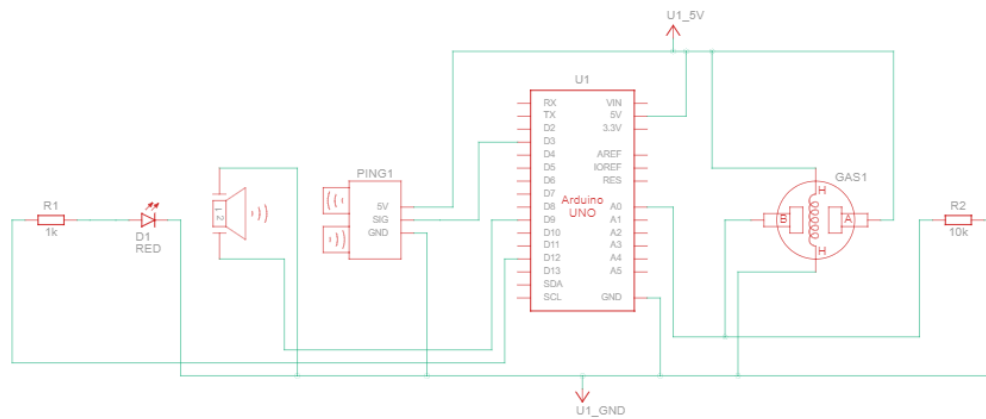
void loop()
{
    if (0.01723 * readUltrasonicDistance(3, 3) < 30)
    {
        digitalWrite(12, HIGH);
    }
    else
    {
        digitalWrite(12, LOW);
    }
    delay(10);
    val = analogRead (A0);
    if (val <500 )
    {
        digitalWrite (9, LOW);
    }
}
```

```
}  
  else  
  {  
digitalWrite(9, HIGH);  
}  
}
```

### Components list:

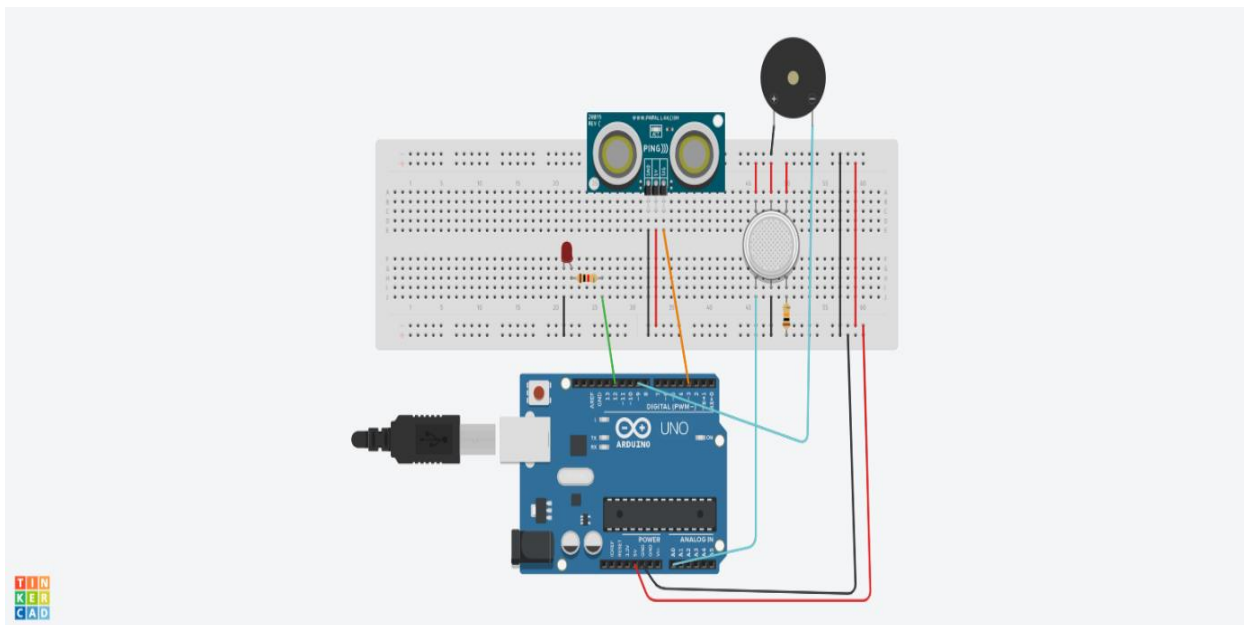
Name	Quantity	Component
U1	1	Arduino Uno R3
D1	1	Red LED
PING1	1	Ultrasonic Distance Sensor
R1	1	1 k $\Omega$ Resistor
PIEZ01	1	Piezo
GAS1	1	Gas Sensor
R2	1	10 k $\Omega$ Resistor

## Schematic Diagram:



Title: Smart Home

## Circuit Diagram:



## Simulation link:

[Circuit design Smart Home | Tinkercad](#)