

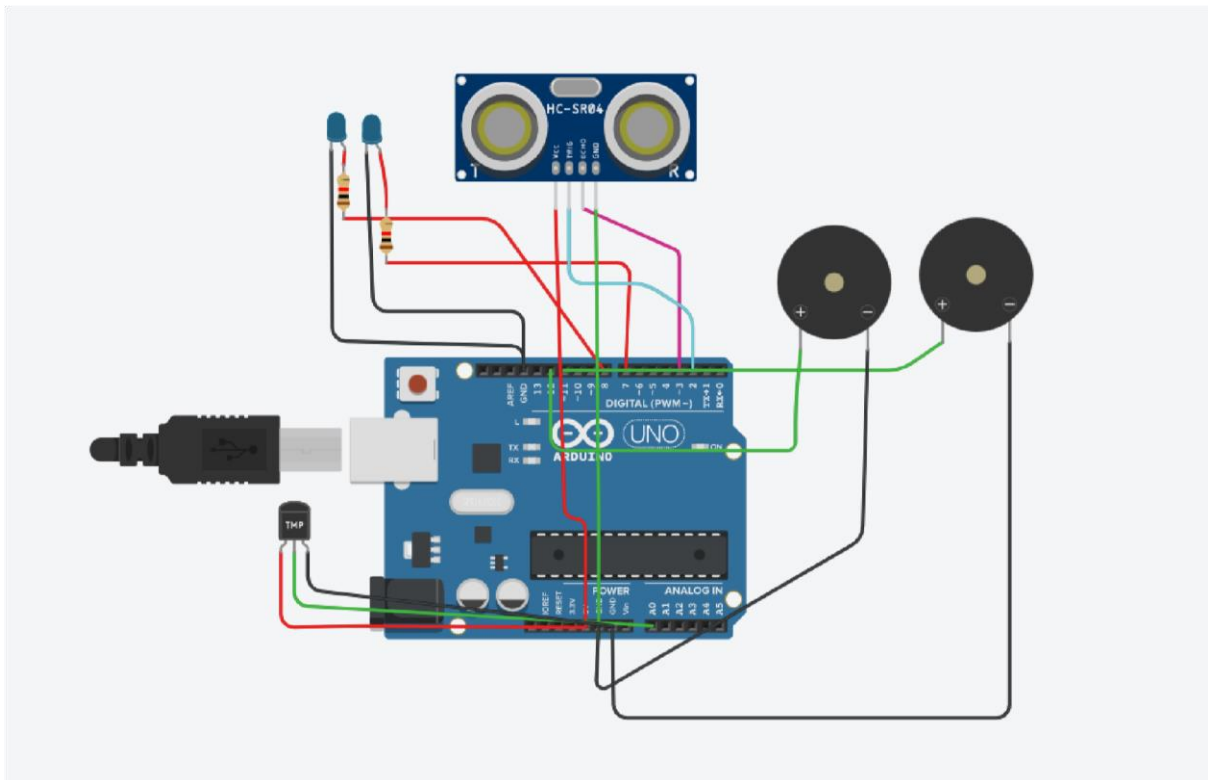
# **IBM - Nalaiya Thiran Project**

## **Assignment 1**

### **Smart Home**

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#### **Circuit Diagram:**



#### **Source Code :**

```
int t=2;  
int e=3;  
  
void setup()  
{  
  Serial.begin(9600);  
  pinMode(t,OUTPUT);
```

```
pinMode(e,INPUT);
pinMode(12,OUTPUT);
}
```

```
void loop() { //ultrasonic
sensor  digitalWrite(t,LOW);
digitalWrite(t,HIGH);
delayMicroseconds(10);
digitalWrite(t,LOW); float
dur=pulseIn(e,HIGH); float
dis=(dur*0.0343)/2;
Serial.print("Distance is: ");
Serial.println(dis);
```

```
    //LED ON
    if(dis>=60)//(in terms of centimeter)
    {
        digitalWrite(8,HIGH);
        digitalWrite(7,HIGH);
    }
```

```
    //Buzzer For ultrasonic Sensor
    if(dis>=60)
    {
        for(int i=0; i<=5; i=i+1)
        {
            tone(12,i);
            delay(1000);
            noTone(12);
            delay(1000);
        }
    }
```

```
    //Temperate Sensor  double a=
    analogRead(A0);  double
    t=(((a/1024)*5)-0.5)*100;
    Serial.print("Temp Value: ");
    Serial.println(t);
    delay(1000);
```

```
//LED ON
if(t>=20)//(in terms of celsius)
{
    digitalWrite(8,HIGH);
digitalWrite(7,HIGH);
}

//Buzzer for Temperature Sensor
if(t>=20)
{
    for(int i=0; i<=5; i=i+1)
    {
        tone(12,i);
        delay(1000);
        noTone(12);
        delay(1000);
    }
}

//LED OFF
if(t<20)
{
    digitalWrite(8,LOW);
digitalWrite(7,LOW);
} }
```

## **Output:**

□ **Serial Monitor:**

A screenshot of a 'Serial Monitor' window. The title bar is light gray with a small icon on the left and a dropdown arrow on the right. The main area is white and contains a list of sensor readings. The readings are: 'Distance is: 68.70', 'Temp Value: 24.71', 'Distance is: 68.67', 'Temp Value: 24.71', 'Distance is: 68.89', 'Temp Value: 24.71', 'Distance is: 68.70', 'Temp Value: 24.71', 'Distance is: 68.70', 'Temp Value: 24.71', 'Distance is: 68.89', 'Temp Value: 24.71', 'Distance is: 68.70', 'Temp Value: 24.71', 'Distance is: 68.70', 'Temp Value: 24.71', 'Distance is: 68.89', 'Temp Value: 24.71', 'Distance is: 68.70', 'Temp Value: 24.71', 'Distance is: 68.70', 'Temp Value: 24.71', 'Distance is: 68.89', 'Temp Value: 24.71', 'Distance is: 68.70', 'Temp Value: 24.71', 'Distance is: 68.70', 'Temp Value: 24.71', 'Distance is: 68.89', 'Temp Value: 24.71', 'Distance is: 68.70', 'Temp Value: 24.71', 'Distance is: 68.70', 'Temp Value: 24.71'.

```
Distance is: 68.70
Temp Value: 24.71
Distance is: 68.67
Temp Value: 24.71
Distance is: 68.89
Temp Value: 24.71
Distance is: 68.70
Temp Value: 24.71
Distance is: 68.70
Temp Value: 24.71
Distance is: 68.89
Temp Value: 24.71
Distance is: 68.70
Temp Value: 24.71
Distance is: 68.70
Temp Value: 24.71
Distance is: 68.89
Temp Value: 24.71
Distance is: 68.70
Temp Value: 24.71
Distance is: 68.70
Temp Value: 24.71
Distance is: 68.89
Temp Value: 24.71
Distance is: 68.70
Temp Value: 24.71
Distance is: 68.70
Temp Value: 24.71
Distance is: 68.89
Temp Value: 24.71
Distance is: 68.70
Temp Value: 24.71
Distance is: 68.70
Temp Value: 24.71
Distance is: 68.89
Temp Value: 24.71
Distance is: 68.70
Temp Value: 24.71
Distance is: 68.70
Temp Value: 24.71
```

□ **Circuit Diagram:**

