

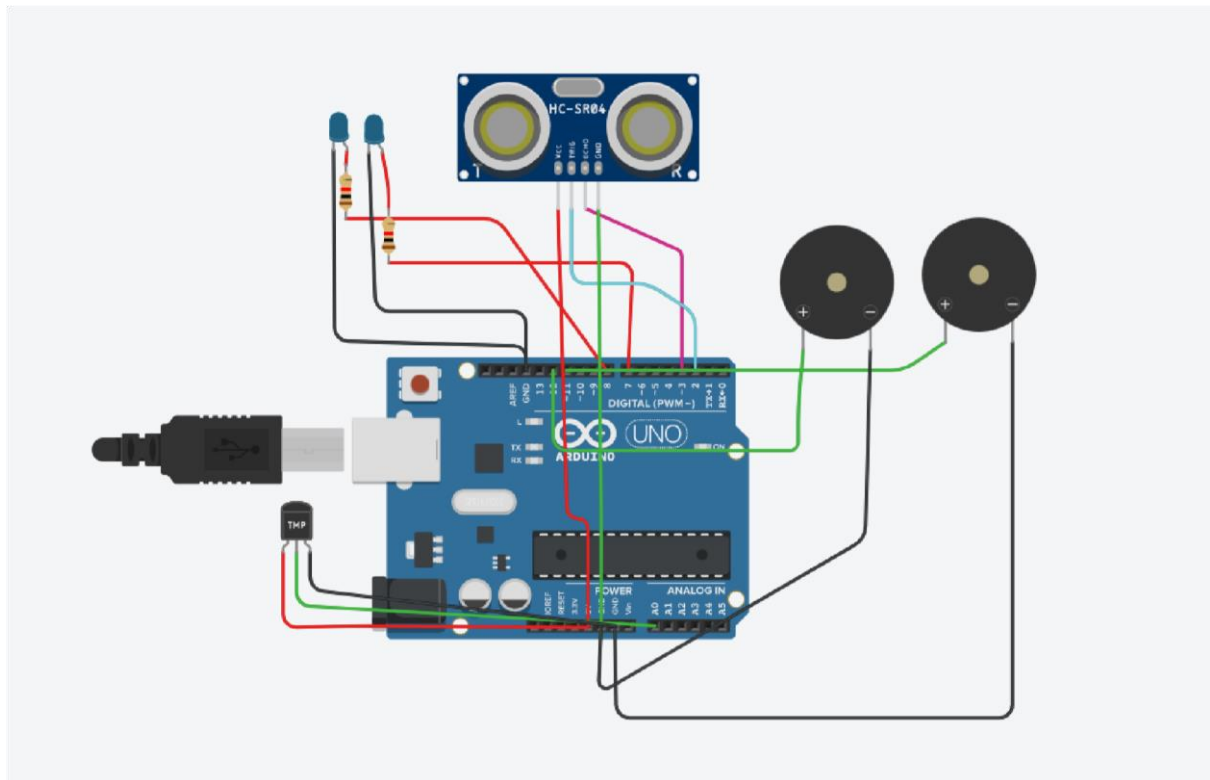
IBM - Nalaiya Thiran Project

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:**

