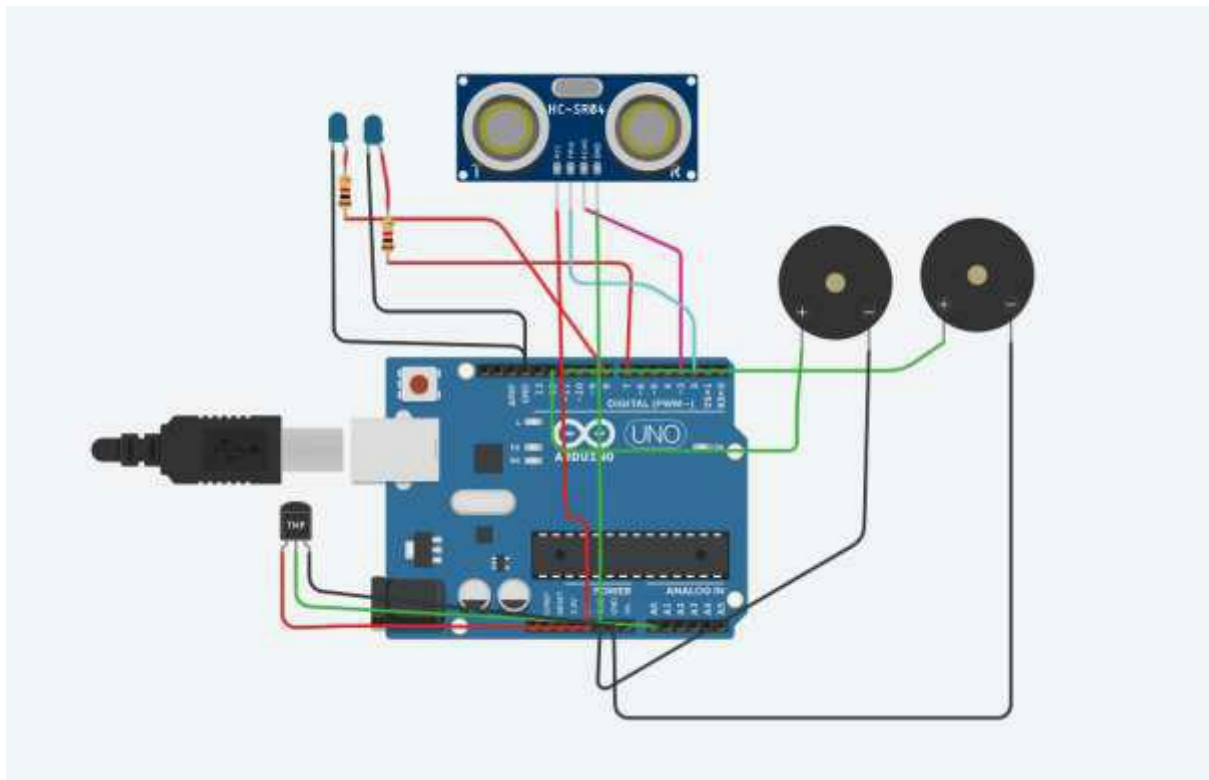# IBM - Nallaiya Thiran Project
# University college of engineering ramanathapuram

# Assignment 1

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## Circuit Diagram:

## Source Code :

```
int t=2;

int e=3;


void setup()

{

  Serial.begin(9600);
```

```cpp
  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);
}
}
```

```arduino
//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
```
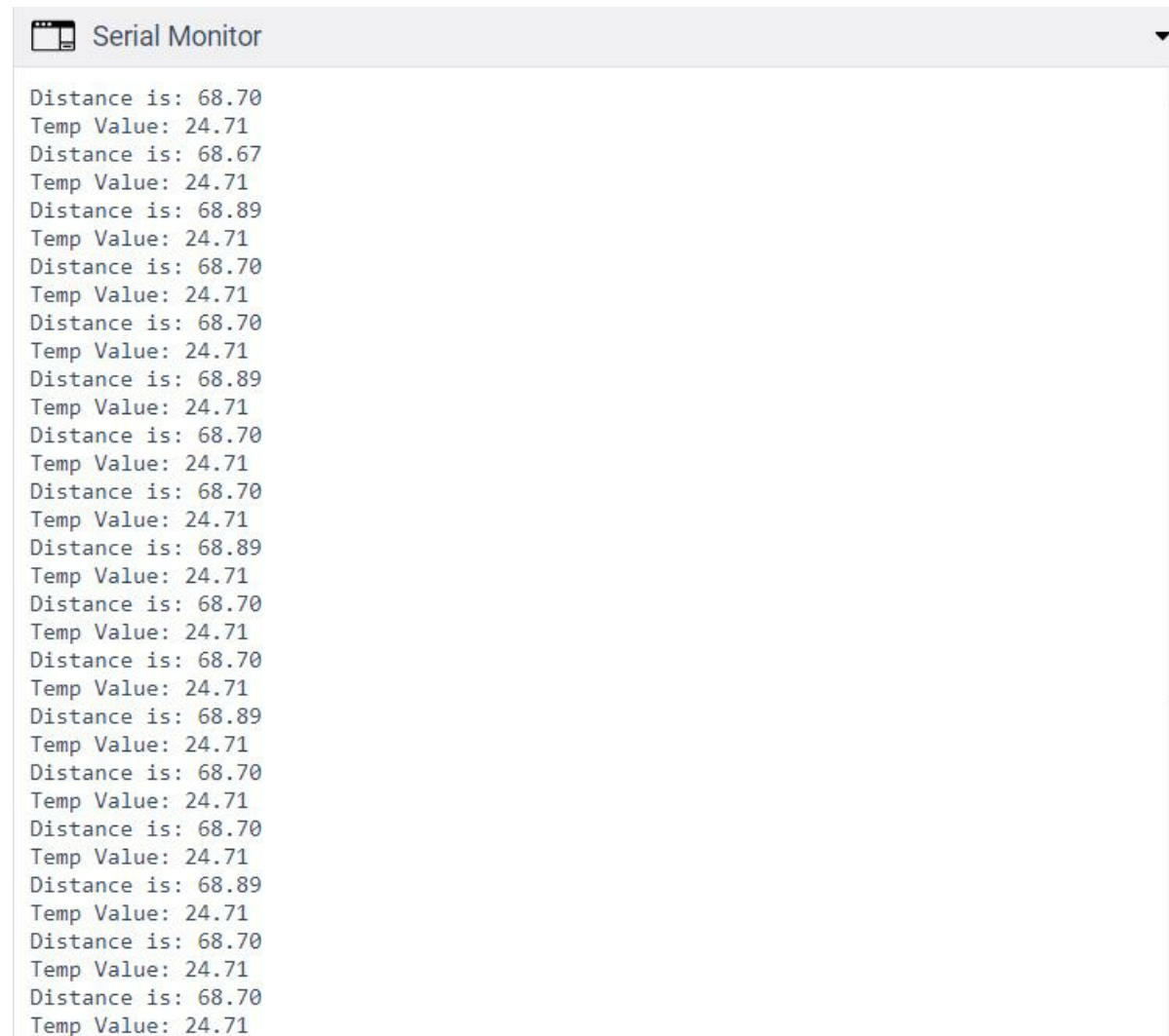
```
  if(t<20)
  {
   digitalWrite(8,LOW);
   digitalWrite(7,LOW);
  }
}
```
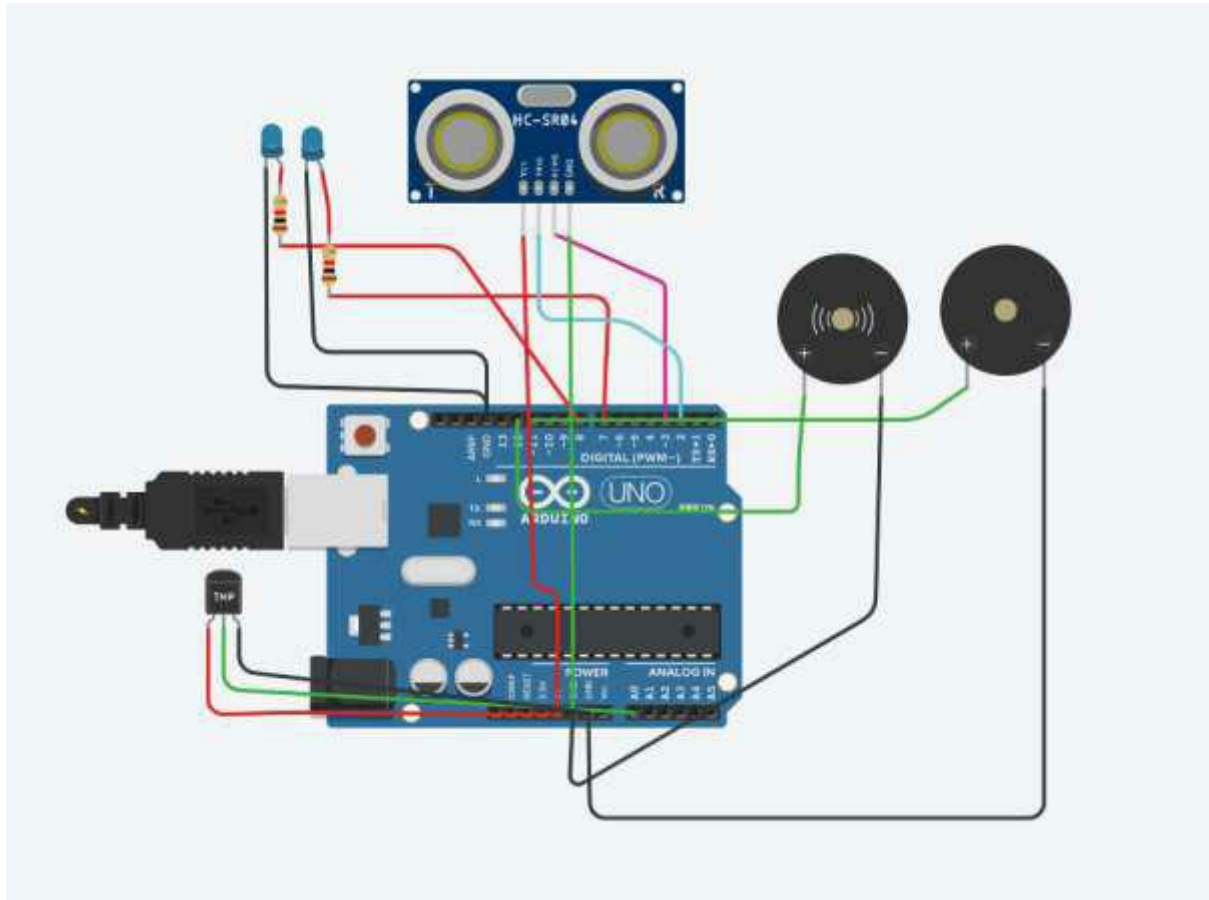
# Output:

- ## Serial Monitor:

```
Serial Monitor

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
```

- **Circuit Diagram:**



## Tinkercad Link:

https://www.tinkercad.com/things/f7CMXFU13JU-ibm-assignment-1-smart-home/editel?sharecode=8L8ftnLaTN3dzkouSmt43CQjO7XNqdQ31LHnOy7lz7c