

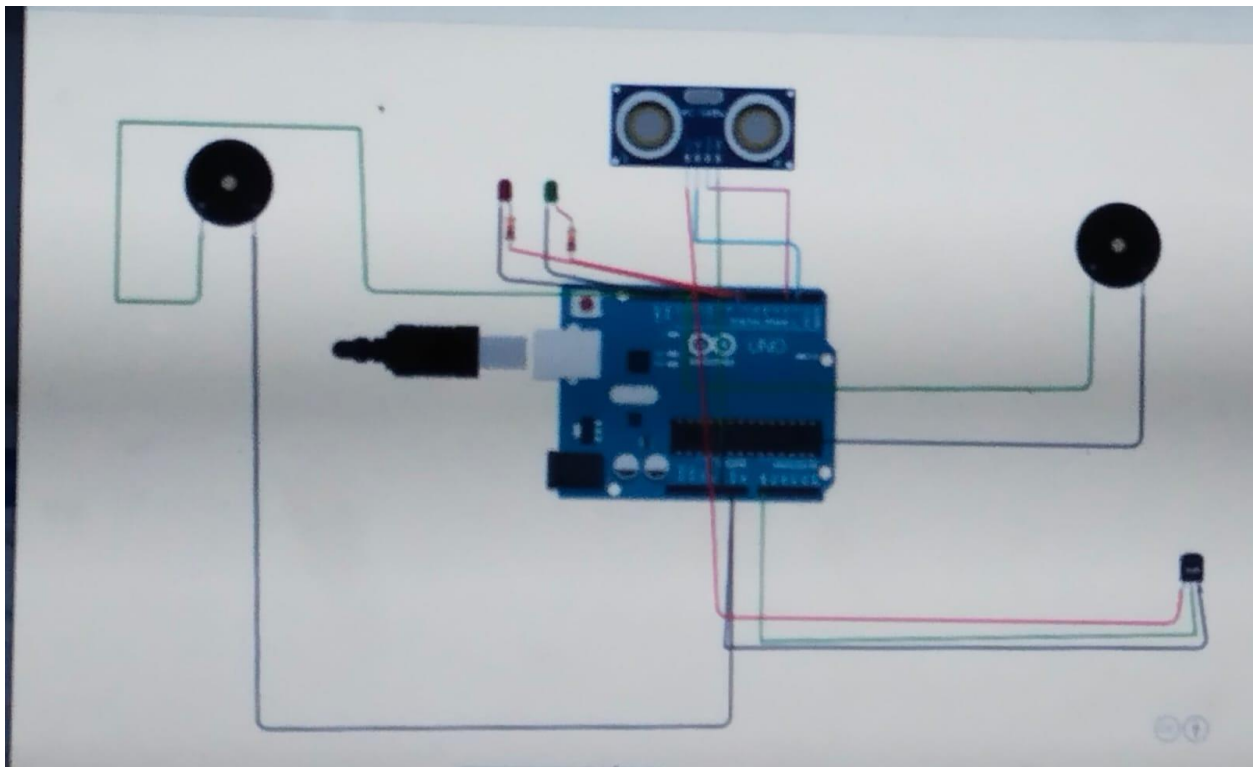
# IBM – NALLAIYA THIRAN PROJECT

## ASSIGNMENT 1 – SMART HOME

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### Circuit Diagram:



### Source Code:

```
// C++ 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);  
}  
}
```

## Tinkercard Link:

<https://www.tinkercad.com/things/3H21Btw9yOw-smart-home/editel>

## Output:

```
Distance is: 112.88  
Temp Value: 24.71  
Distance is: 112.88  
Temp Value: 24.71  
Distance is: 112.86  
Temp Value: 24.71  
Distance is: 112.88  
Temp Value: 24.71  
Distance is: 112.88  
Temp Value: 24.71  
Distance is: 112.88  
Temp Value: 24.71  
Distance is: 112.88
```

