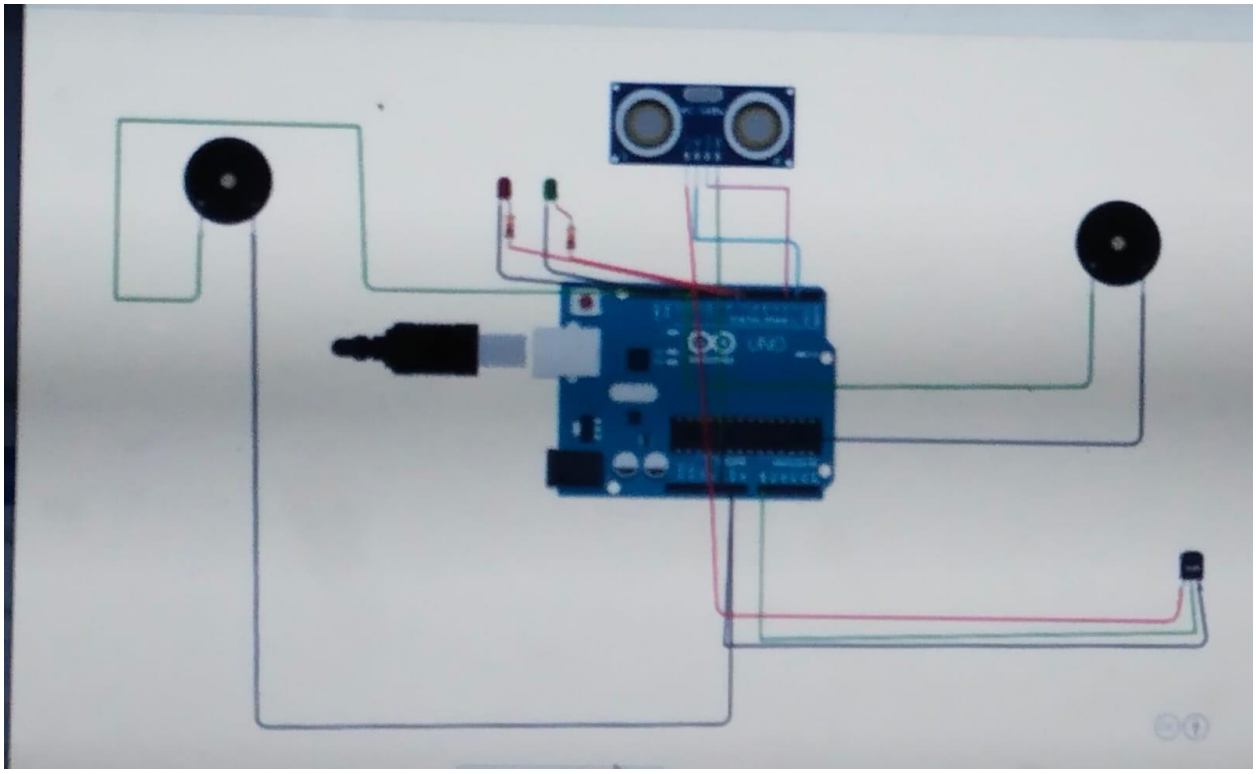
IBM – NALLAIYA THIRAN PROJECT

ASSIGNMENT 1 – SMART HOME

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);
```

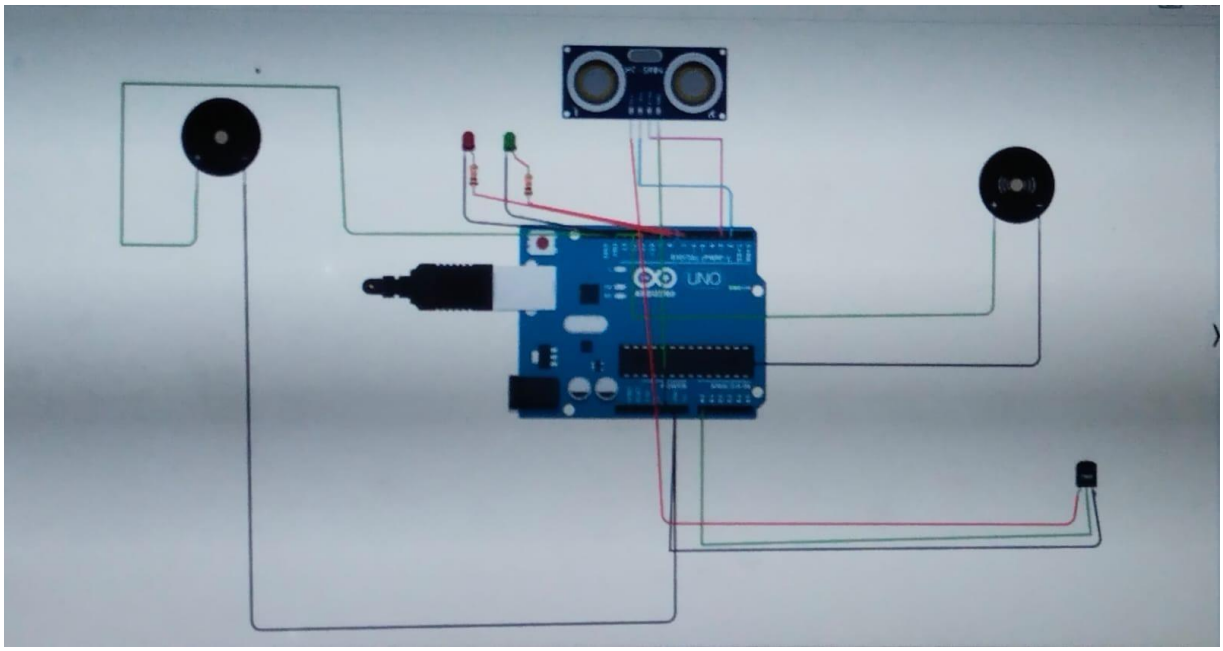
```
 delay(1000);
 }
 }
 //LED OFF
 if(t<20)
 {
 digitalWrite(8,LOW);
 digitalWrite(7,LOW);
 }
}
```

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
```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