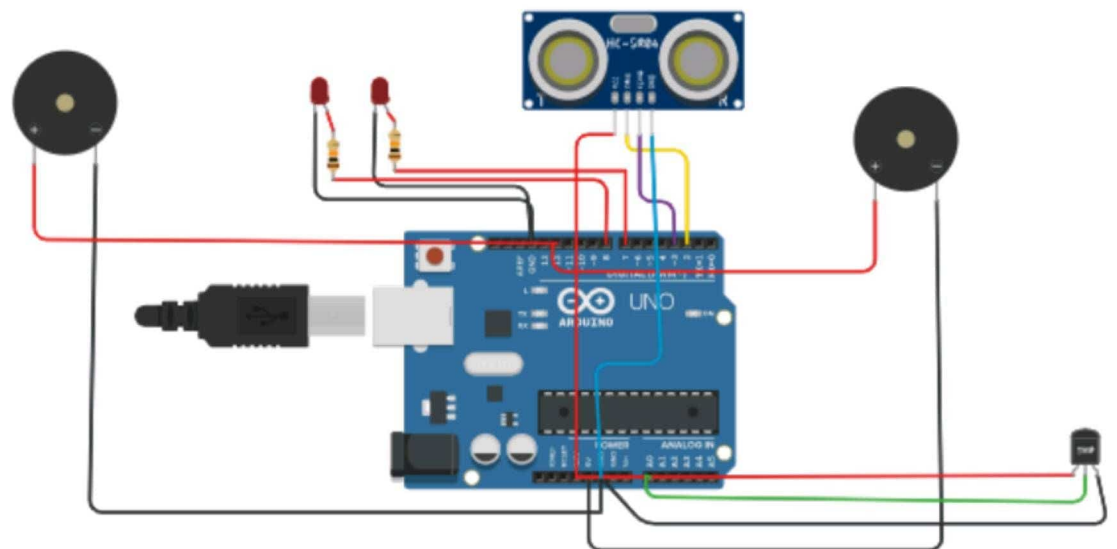# IBM - Nallaiya Thiran Project
Assignment 1 - Smart Home

-
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Circuit Diagram

Program

```
// C++ code
//
int t=2;
int e=3;
```

```cpp
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);
}
}
```

Tinkercad Link:

https://www.tinkercad.com/things/ahfFqnfTBxi

Serial Monitor

```
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: 68.67
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
```

Send   Clear