IBM – Nallaiya Thiran Project
Assignment 1 – Smart Home

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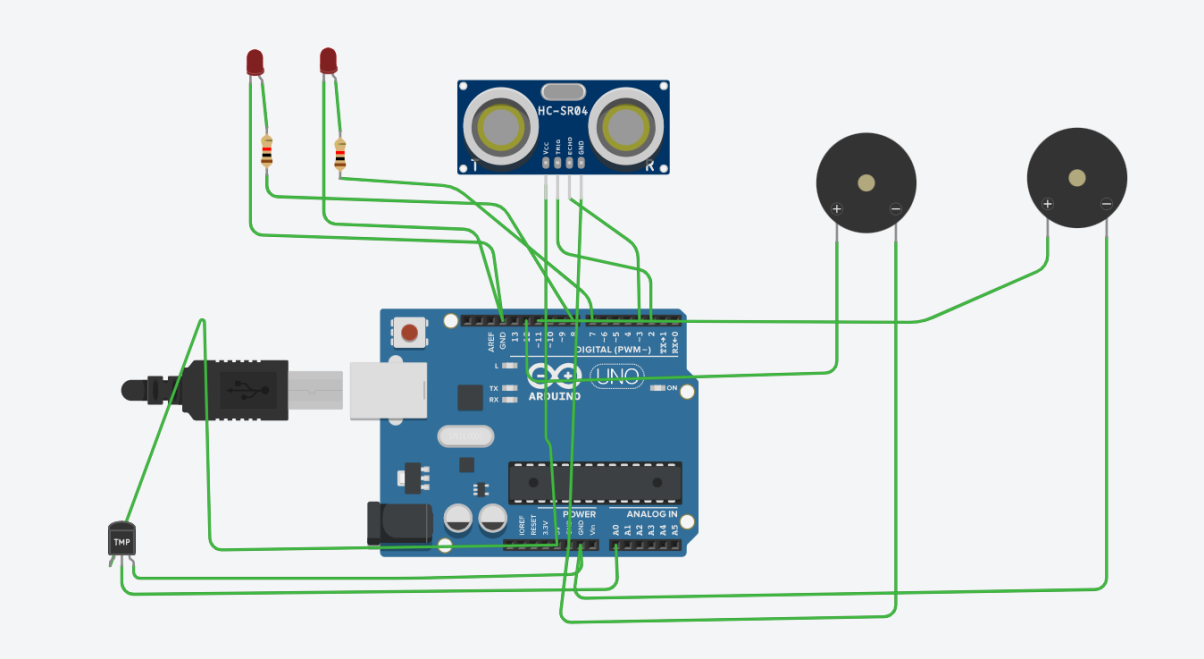
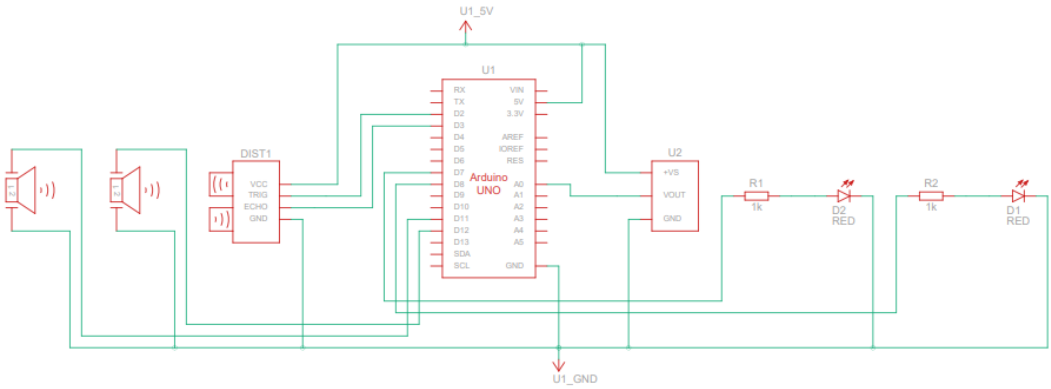
Circuit Diagram:





Source Code:

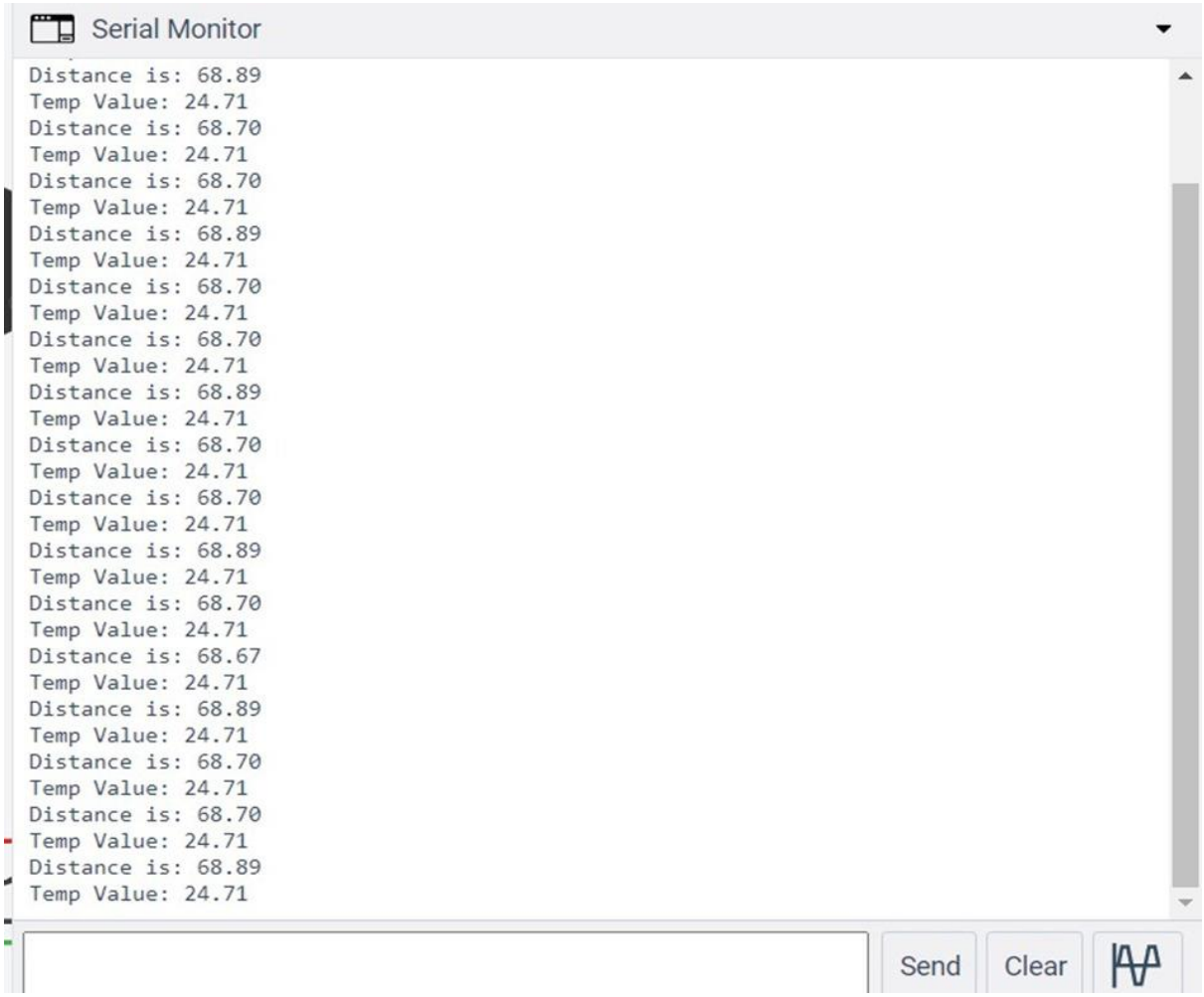
```
int t=2;

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>=100)//(in terms of centimeter)
 {
 digitalWrite(8,HIGH);
 digitalWrite(7,HIGH);
 }

 //Buzzer For ultrasonic Sensor
 if(dis>=100)
 {
 for(int i=0; i<=30000; i=i+10)
 {
 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>=100)//(in terms of celsius)
{
digitalWrite(8,HIGH);
digitalWrite(7,HIGH);
}

//Buzzer for Temperature Sensor
if(t>=100)
{
for(int i=0; i<=30000; i=i+10)
{
tone(12,i);
delay(1000);
noTone(12);
delay(1000);
}
}
//LED OFF
if(t<100)
```

```
{
digitalWrite(8,LOW);
digitalWrite(7,LOW);
}
}
```

Output(Serial Monitor):



Tinker cad Link:

https://www.tinkercad.com/things/1SkNDyEBEK4-ibm-iot/editel