IBM-NALLAIYA THIRAN Project

Assignment1-SMART HOME

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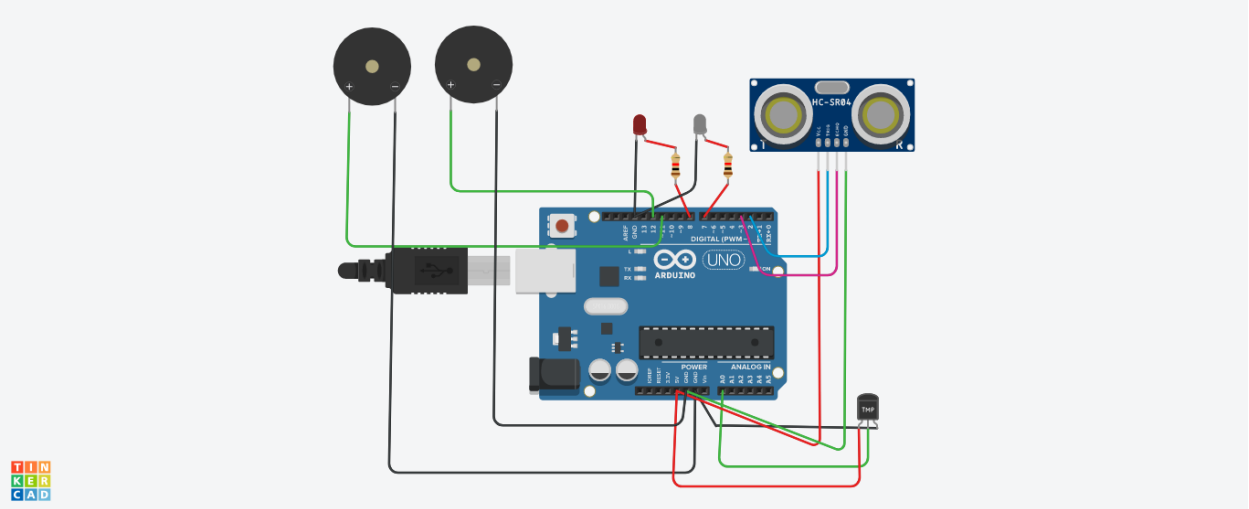
Circuit Diagram:



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

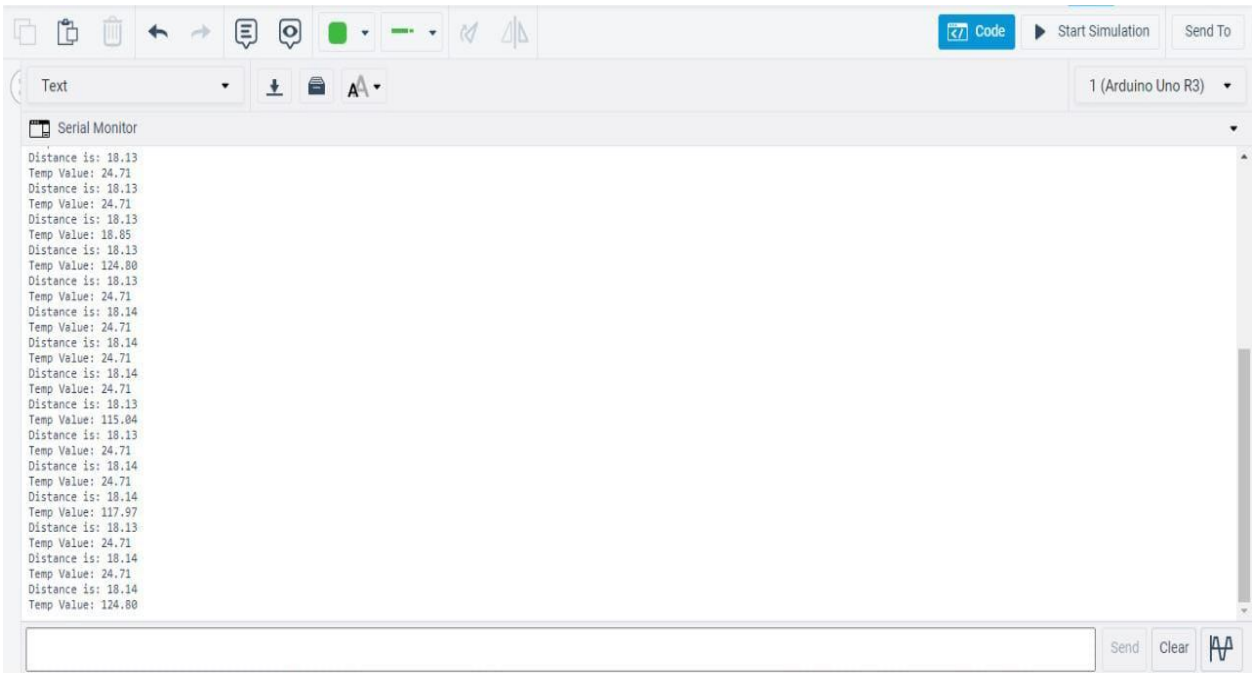
```
//Buzzer For ultrasonic Sensor
if(dis>=100)
{
for(int i=0; i<=30000; i=i+10)
{
tone(12,i);
delay(1000);
noTone(12);
delay(1000);
}
}
//Temperate Sensor
double a= analogRead(A0);
double t=(((a/1024)*5)-0.5)*100;
Serial.print("Temp Value: ");
Serial.println(t);
delay(1000);
//LED ON
if(t>=100)//(in terms of celsius)
{
digitalWrite(8,HIGH);
digitalWrite(7,HIGH);
```

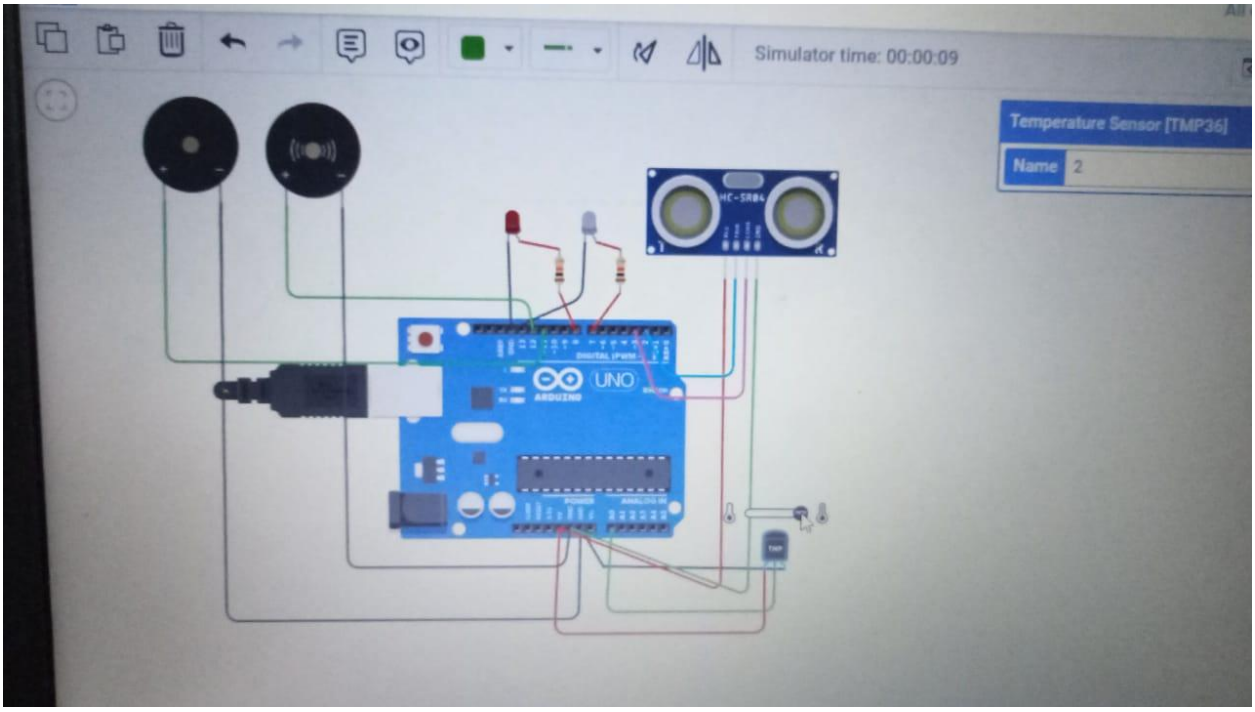
```
 }
//Buzzer for Temperature Sensor
 if(t>=100)
 {
 for(int i=0; i<=30000; i=i+10)
 {
 tone(12,i);
 delay(1000);
 noTone(12);
 delay(1000);
 }
 }
 //LED OFF
 if(t<100)
 {
 digitalWrite(8,LOW);
 digitalWrite(7,LOW);
 }
}
```

Tinkercad link:

https://www.tinkercad.com/things/0hRmwcG3Nm2-brave-stantia/editel?sharecode=m0yCbud_kwXyRuUO8XnLH2b381wqzYCArOAiKKVnnXk

OUTPUT:


Code
Start Simulation
Send To
Text
1 (Arduino Uno R3)
Serial Monitor
Distance is: 18.13
Temp Value: 24.71
Distance is: 18.13
Temp Value: 24.71
Distance is: 18.13
Temp Value: 18.85
Distance is: 18.13
Temp Value: 124.80
Distance is: 18.13
Temp Value: 24.71
Distance is: 18.14
Temp Value: 24.71
Distance is: 18.14
Temp Value: 24.71
Distance is: 18.14
Temp Value: 24.71
Distance is: 18.13
Temp Value: 115.04
Distance is: 18.13
Temp Value: 24.71
Distance is: 18.14
Temp Value: 24.71
Distance is: 18.14
Temp Value: 117.97
Distance is: 18.13
Temp Value: 24.71
Distance is: 18.14
Temp Value: 24.71
Distance is: 18.14
Temp Value: 124.80
Send
Clear


Simulator time: 00:00:09
Temperature Sensor [TMP36]
Name 2
HC-SR04
UNO
ARDUINO