

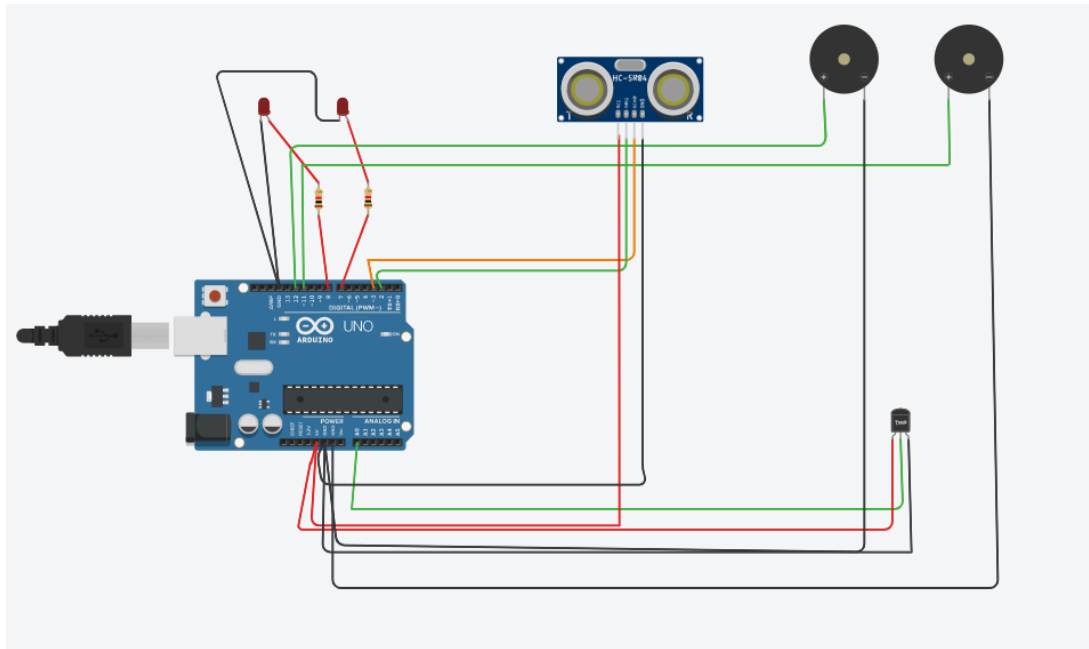
IBM - Nalaiya Thiran Project Assignment 1

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>=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/dMw7n2MYb2J-bodacious-sango-jofo/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: 112.86
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
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
```

