IBM - Nalaiya Thiran Project

Assignment 1

Smart Home

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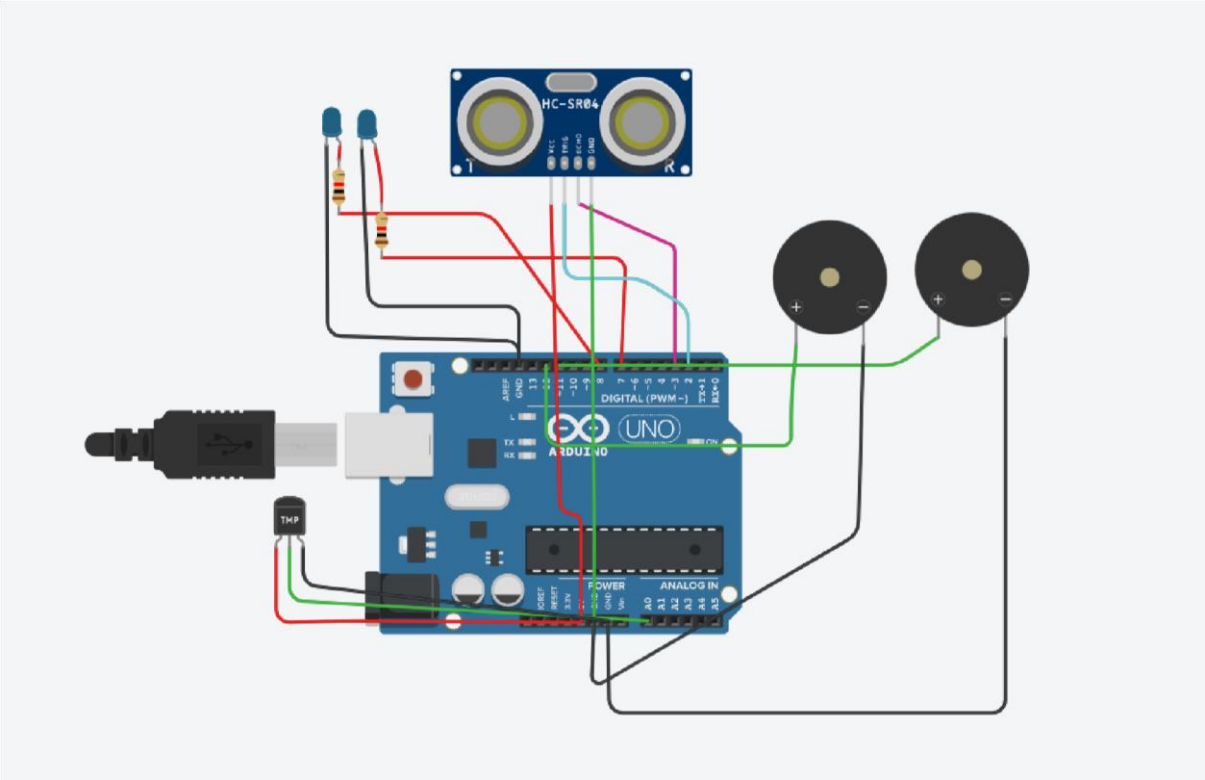
Circuit Diagram:



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);
  } }
```

Output:

➢ Serial Monitor:

Serial Monitor

```
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
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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
```
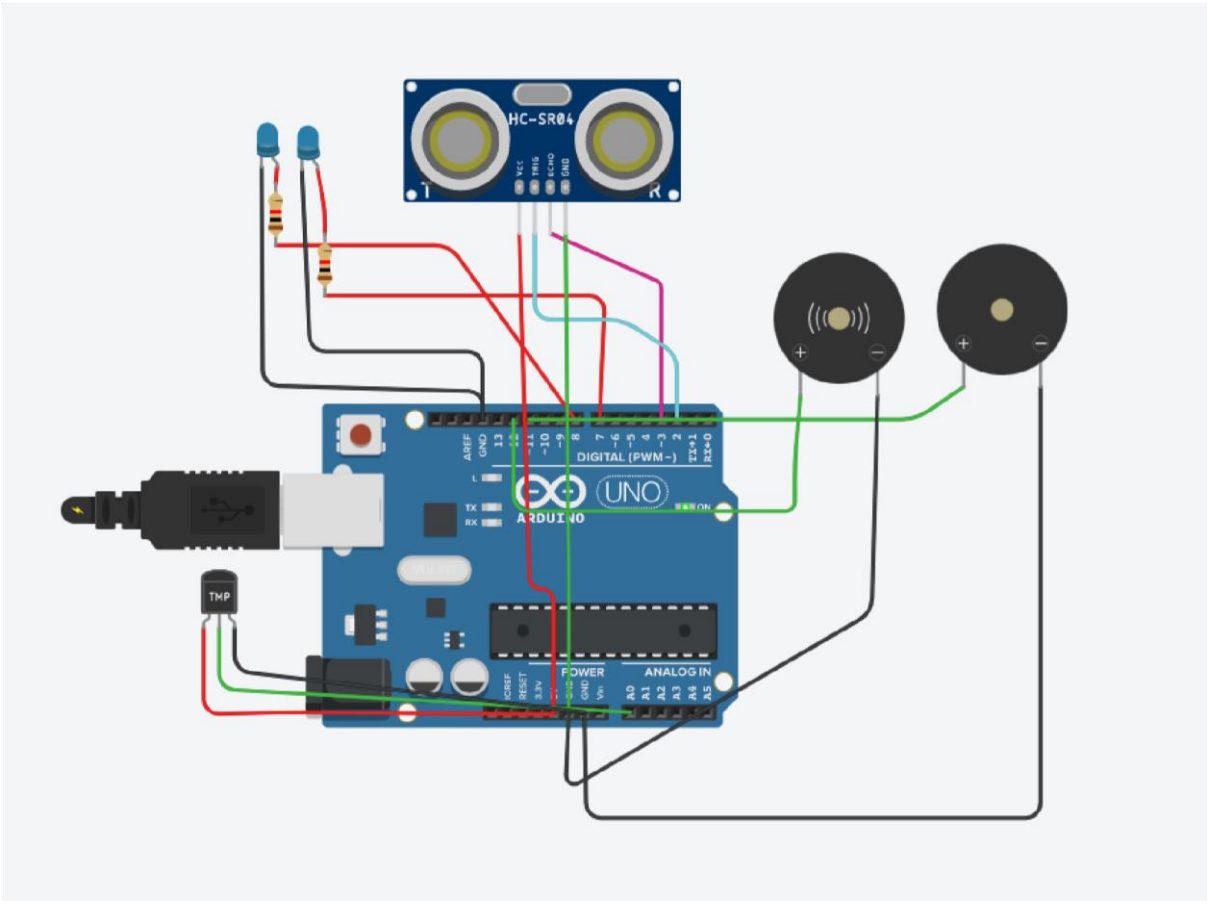

□ Circuit Diagram:


HC-SR04
VCC
TRIG
ECHO
GND
DIGITAL (PWM~)
UNO
ARDUINO
POWER
ANALOG IN
TMP