

IBM-NALAIYA THIRAN PROJECT

ASSIGNMENT 1 – Smart Home

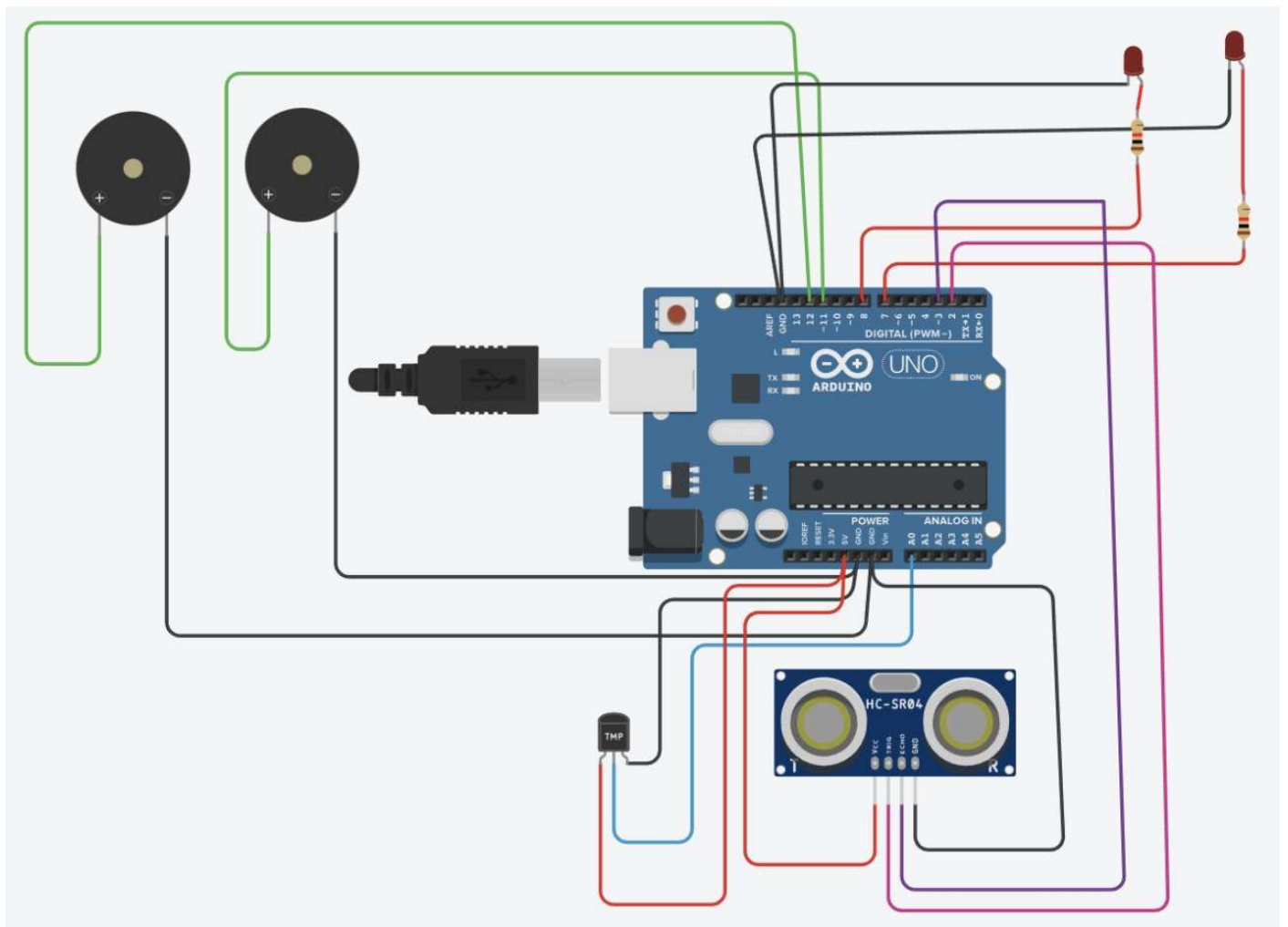
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Circuit Diagram:



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
```

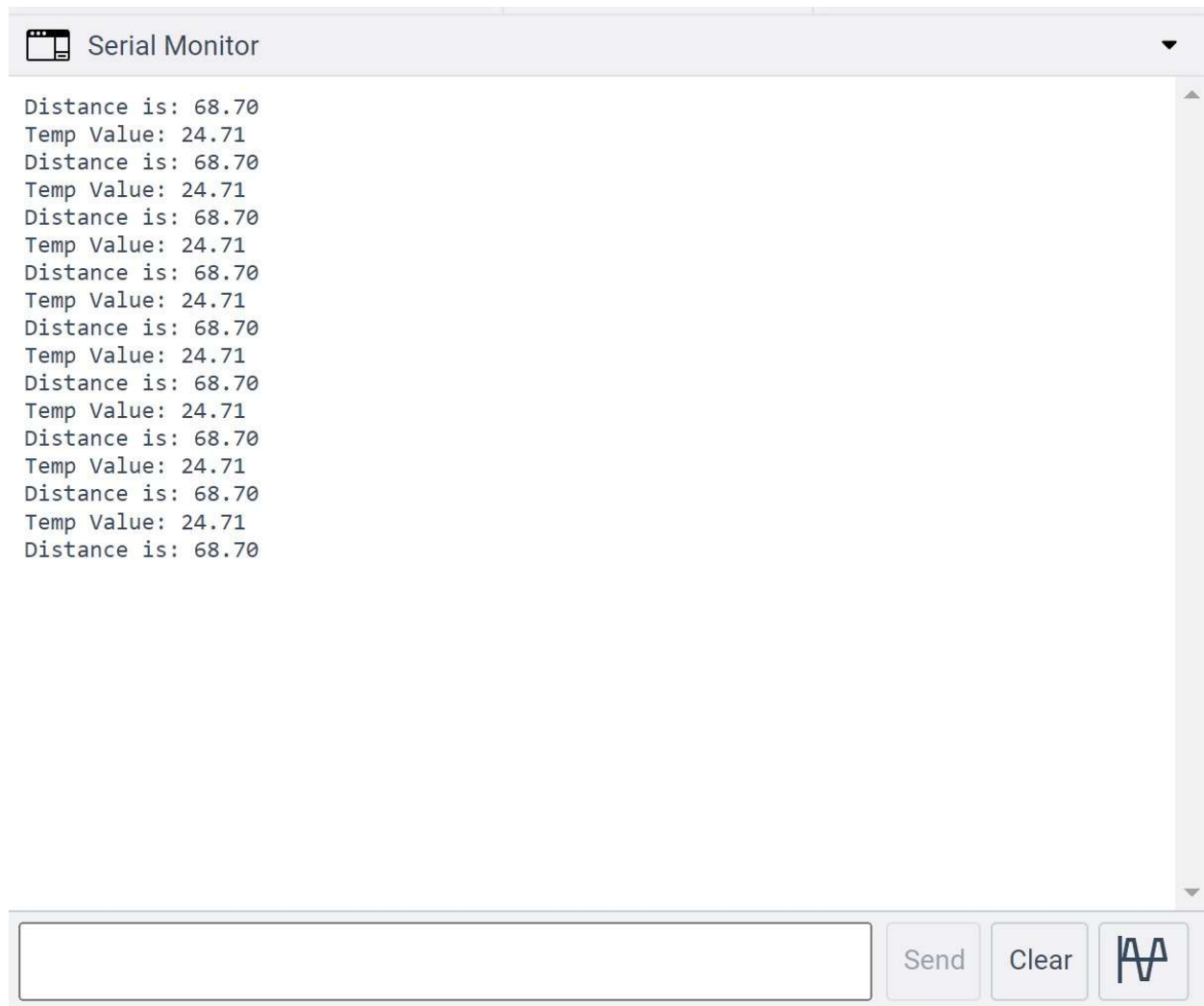
```
    if(dis>=60)    //(in terms of centimeter)
```

```
{
```

```
    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:



Tinkercad Link:

https://www.tinkercad.com/things/kYcyM1UKDW9-glorious-trug%02kup/editel?sharecode=PNznT5MqDVya1hINSESy3G2Fg4vKznWRJV_7RGBzpzo