IBM – Nalaiya Thiran Assignment 1

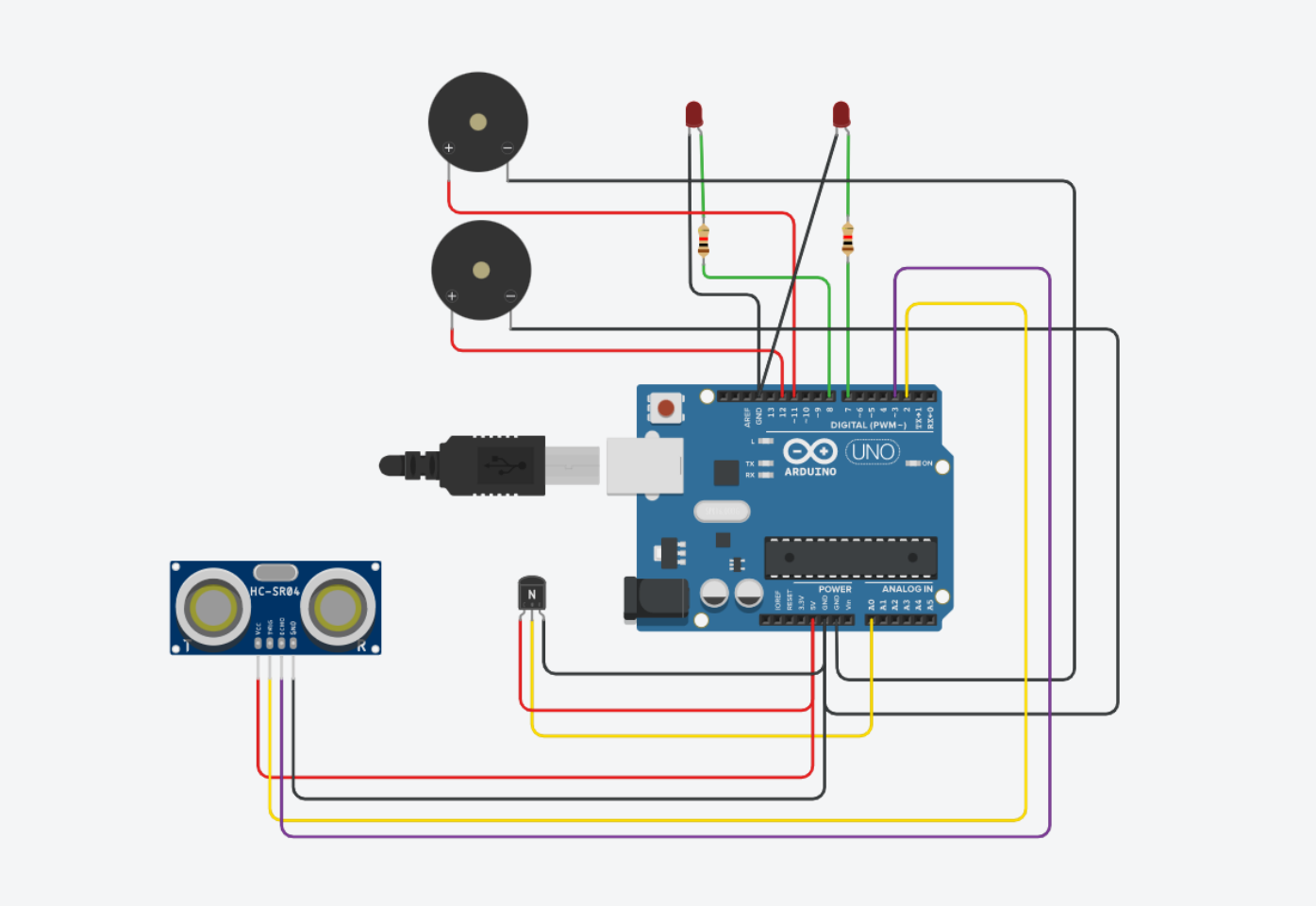
SMART HOME

Submitted by

Deepa Shree .S

960219104038

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)
 {
 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)
 {
 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

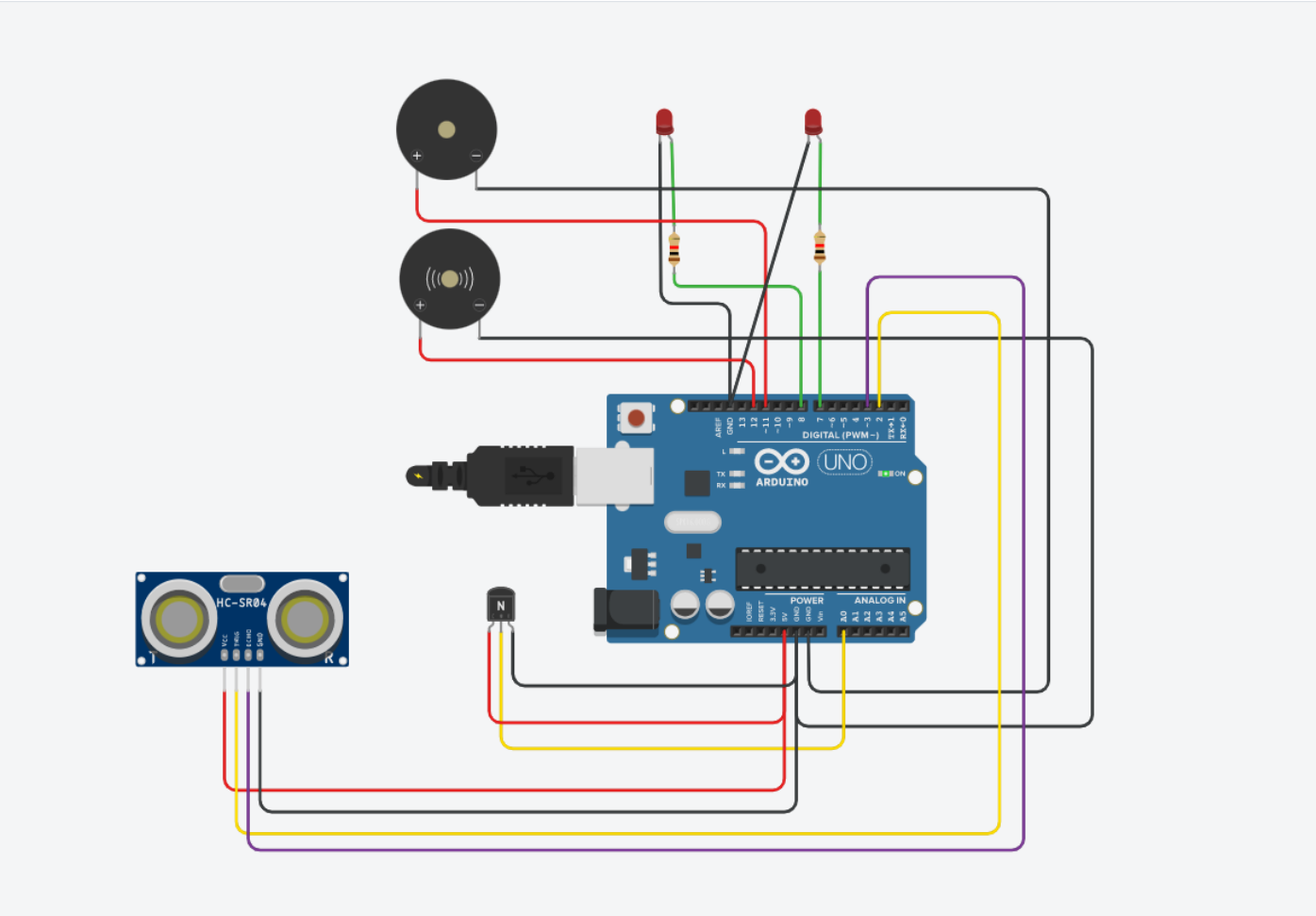
```
 if(t<100)
 {
 digitalWrite(8,LOW);
 digitalWrite(7,LOW);
 }
}
```

TINKERCAD LINK

https://www.tinkercad.com/things/1q4wk9dyCGW-super-snicket-migelo/editel

OUTPUT

```
Distance is: 98.61
Temp Value: -49.51
Distance is: 98.61
Temp Value: -49.51
Distance is: 98.44
Temp Value: -49.51
Distance is: 98.61
Temp Value: -49.51
Distance is: 98.61
Temp Value: -49.51
Distance is: 98.42
Temp Value: -49.51
Distance is: 98.61
Temp Value: -49.51
Distance is: 98.61
Temp Value: -49.51
Distance is: 98.39
Temp Value: -49.51
Distance is: 98.42
Temp Value: -49.51
Distance is: 98.61
Temp Value: -49.51
Distance is: 98.42
Temp Value: -49.51
Distance is: 98.61
Temp Value: -49.51
Distance is: 98.61
Temp Value: -49.51
Distance is: 109.86
Distance is: 85.90
Temp Value: -49.51
Distance is: 85.90
Temp Value: -49.51
Distance is: 86.09
Temp Value: -49.51
Distance is: 85.87
```


HC-SR04
DIGITAL (PWM~)
UNO
ARDUINO
POWER
ANALOG IN