

ASSIGNMENT – I

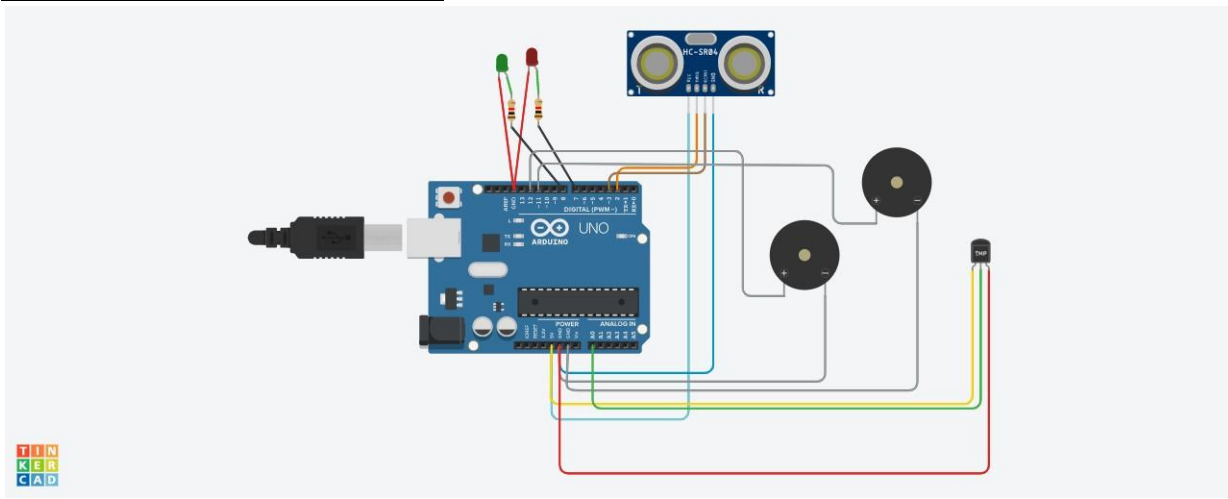
DOMAIN:-IOT

TOPIC:-Gas leakage monitoring and Alerting system

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Roll Num: 718019L259

SMART Home Circuit Connection:



COMPONENTS

<u>Quantity</u>	<u>Component</u>
1	Arduino Uno R3
1	Red LED
1	Green LED
1	Temperature Sensor [TMP36]
1	Ultrasonic Distance Sensor
2	1 kΩ Resistor
2	Piezo

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);
}
}
```