Problem Statement :

IoT- Gas leakage Monitoring and alerting system

Domain :

Internet of Things

ASSIGNMENT 1

By,

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```
const int pingPin = 10;
const int ledUS = 2;
const int light = 7;
const int pir = 4;
#define photoSensor A0
#define buzzer 3 int const
```

```
PINO_SGAS = A5; int
const ledGas = 8; int const
button = 5; int const
motor = 13;
void setup()
{
 pinMode(ledUS, OUTPUT);
 pinMode(light, OUTPUT);
 pinMode(buzzer, OUTPUT);
 pinMode(ledGas, OUTPUT);
 pinMode(motor, OUTPUT);
 pinMode(pir, INPUT);
 pinMode(button, INPUT);
 pinMode(photoSensor, INPUT);
 Serial.begin(9600);
}
void loop()
{
 long duration, cm; int valLight =
 analogRead(photoSensor); int valPIR=
 digitalRead(pir);
 int valGAS = analogRead(PINO_SGAS); valGAS = map(valGAS, 300, 750, 0, 100);
 int valBt = digitalRead(button);
 pinMode(pingPin, OUTPUT);
 digitalWrite(pingPin, LOW);
 delayMicroseconds(2); digitalWrite(pingPin,
 HIGH); delayMicroseconds(5);
 digitalWrite(pingPin, LOW);
```

```
pinMode(pingPin, INPUT); duration =
pulseIn(pingPin, HIGH); cm =
microsecondsToCentimeters(duration);
if(cm < 336){ digitalWrite(ledUS, HIGH);
}else{
  digitalWrite(ledUS, LOW);
}
if(valLight < 890){
  digitalWrite(light, HIGH);
}else{ digitalWrite(light,
  LOW);
}
if(valPIR == 1){
  digitalWrite(buzzer, HIGH);
}else{
  digitalWrite(buzzer, LOW);
}
if(valBt == 1){
  digitalWrite(motor, HIGH);
}else{
  digitalWrite(motor, LOW);
}
if(valGAS > 20){
  digitalWrite(ledGas, HIGH);
}else{
  digitalWrite(ledGas, LOW);
}
Serial.print(valPIR);
```

```
  Serial.println();
}
long microsecondsToCentimeters(long microseconds) {
  return microseconds / 29 / 2;
}
```

Simulation :