

IBM IDEATION PHAS

GAS LEAKAGE MONITORING AND ALERT SYSTEM FOR INDUSTRIES

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Code :

```
#include <LiquidCrystal.h>
```

```
LiquidCrystal lcd(2,3,4,5,6,7);
```

```
#include <SoftwareSerial.h>
```

```
SoftwareSerial mySerial(9, 10);
```

```
int gasValue = A0; // smoke / gas sensor connected with analog pin A1 of the arduino / mega.
```

```
int data = 0;
```

```
int buzzer = 13;
```

```
int G_led = 8; // choose the pin for the Green LED
```

```
int R_led = 9; // choose the pin for the Red Led
```

```
void setup()
```

```
{
```

```
  pinMode(buzzer,OUTPUT);
```

```
  pinMode(R_led,OUTPUT); // declare Red LED as output
```

```
pinMode(G_led,OUTPUT); // declare Green LED as output

randomSeed(analogRead(0));

mySerial.begin(9600); // Setting the baud rate of GSM Module

Serial.begin(9600); // Setting the baud rate of Serial Monitor (Arduino)

lcd.begin(16,2);

pinMode(gasValue, INPUT);

lcd.print (" Gas Leakage ");

lcd.setCursor(0,1);

lcd.print (" Detector Alarm ");

delay(3000);

lcd.clear();
}

void loop()
{
data = analogRead(gasValue);

Serial.print("Gas Level: ");

Serial.println(data);

lcd.print ("Gas Scan is ON");

lcd.setCursor(0,1);

lcd.print("Gas Level: ");

lcd.print(data);

delay(1000);

if ( data > 90) //
```

```
{  
  
digitalWrite(buzzer, HIGH);  
  
digitalWrite(R_led, HIGH); // Turn LED on.  
  
digitalWrite(G_led, LOW); // Turn LED off.  
  
SendMessage();  
  
Serial.print("Gas detect alarm");  
  
lcd.clear();  
  
lcd.setCursor(0,0);  
  
lcd.print("Gas Level Exceed");  
  
lcd.setCursor(0,1);  
  
lcd.print("SMS Sent");  
delay(1000);  
}  
  
else  
  
{  
  
digitalWrite(buzzer, LOW);  
  
digitalWrite(R_led, LOW); // Turn LED off.  
  
digitalWrite(G_led, HIGH); // Turn LED on.  
  
Serial.print("Gas Level Low");  
  
lcd.clear();  
  
lcd.setCursor(0,0);  
  
lcd.print("Gas Level Normal");  
delay(1000);
```

```
}  
  
lcd.clear();  
  
}  
  
void SendMessage()  
  
{  
  
Serial.println("I am in send");  
  
mySerial.println("AT+CMGF=1"); //Sets the GSM Module in Text Mode  
  
delay(1000); // Delay of 1000 milli seconds or 1 second  
  
mySerial.println("AT+CMGS=\"+91xxxxxxxxxx\"\\r"); // Replace x with mobile number  
  
delay(1000);  
  
mySerial.println("Excess Gas Detected."); // The SMS text you want to send  
  
mySerial.println(data);  
  
delay(100);  
  
mySerial.println((char)26); // ASCII code of CTRL+Z  
  
delay(1000);  
  
}
```