Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	PNT2022TMID26079
Project Name	Gas leakage monitoring and alerting system for industries
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The main problem is to detect the leakage of cases and in case of any leakage send an alert message.
2.	Idea / Solution description	Arduino UNO (Atmega-328) is the main unit of the system which performs the following tasks.A signal conditioning of the Arduino UNO is done by output signal of the sensor, provided input to Arduino.The detection results displayed on LCD.Indicates the people in danger in the workplace, factory, home. Buzzer activity with beep(siren) sound is made.Also send alert SMS to the in charge of the plant whose number is saved in SIM card by using GSM modem. The SMS received depends upon the leak of gas in the detection area of the sensor.
3.	Novelty / Uniqueness	The scenario that the device applies during the leakage of the gas briefly is: when the gas detected crosses the threshold adjusted by the developer it will inform the user that there is a gas leakage in the form of a SMS message just to keep the user up with the situation. However, the device will immediately take the action of closing the main valve that supplies the space with gas. Then another massage would be sent to the user to inform him that the situation has been handled.
4.	Social Impact / Customer Satisfaction	By using this technology the rate of gas leakage accidents is reduced by a great margin.This can be used by domestic households who can keep a check on their houses when out. This is particularly helpful for working families.

5.	Business Model (Revenue Model)	The main target of our solution is Industries so we have planned to visit industries and explain them about the benefits of our products. So that they can aware of the importance of this solution and use it.
6.	Scalability of the Solution	In this system, we have described a new approach for the gas leakage detection system. In this system, we have used the MQ-2 sensor which is used to build an LPG Leakage Detector using a NodeMCU (ESP8266). Also, the ESP8266 has been programmed in such a way so as to communicate between the gas sensor and Firebase Realtime Database (RTD). A quick response rate is provided by this system. The advantage of this project is that it is easy to use and is a lot less expensive than any other alternatives. With the help of this system, the critical situations can be solved quickly over the manual methods which require a large amount of time