Project Design Phase-II
Solution Requirements
(Functional & Non-functional)

Date	19 October 2022
Team ID	PNT2022TMID13124
Project Name	Project- Gas Leakage Monitoring and Alerting System for Industries.
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Gmail Registration through Mobile
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Detection	The system can be deployed in homes, hotels, factory units, LPG cylinder storage areas, and so on. The main advantage of this Arduino based application is that it can determine the leakage of gas and send the data over to a site.
FR-4	Monitoring	The leakage can be monitored and can be optimized for Detecting the toxic gasses.
FR-5	Alerting	Along with monitoring the leakage, it can also able to alert the registered user and the people in the vicinity by using the buzzer this can help in preventing any Disaster or events.
FR-6	Communication	The registered user can be able to get alert from the system through SMS and can also be able to get the notification in the installed app.

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	This tool verifies that usability is a special and important perspective to analyze the user requirements,which can further improve the tool quality. In the model process with the user experience as the core, the analysis of user's usability can indeed help the designers better understand the user's potential needs, behaviors and experience.
NFR-2	**Security**	By identifying the danger of hazardous gas leakage with prior notification, people can evacuate in time.

NFR-3	**Reliability**	By the use of various sensors, we can able to detect the various gas leakage and can identify the location of the leakage within short period of time.
NFR-4	**Performance**	In this technique the sensor sends the signal to the Arduino UNO after detecting the gas leakage. Arduino send the signal to the other externally connected devices such as buzzer and GSM module. SMS is sent by GSM module to the provided mobile number as a result. In practice, results are noticed by the people surrounding by the area are alerted by buzzer sound indicating the danger to the people by making the beep sound.
NFR-5	**Availability**	By developing & deploying resilient tool, we are alerting the user by the alarm sound and sending the SMS to the registered mobile number.
NFR-6	**Scalability**	By using this system which detects the gas leakage applicable for the industrial and domestic purpose. In danger situations we are able to save the lives of human beings.