

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

Date	20 October 2022
Team ID	PNT2022TMID34127
Project Name	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 Form Registration through Gmail Registration through LinkedIn
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Input	The IoT based powered gas leakage detection utilizes an MQ5 sensor as an input.
FR-4	Temperature	The temperature of the leakage gases was 45 °C
FR-5	Method	MQ5 sensor is used to detect gas leakage
FR-6	Output	Buzzer is the output of the system. The sound of the buzzer is beep-beep, which indicates the danger

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	It must be user friendly for all medium of peoples
NFR-2	Security	Gas leakage detector which sends a warning signal to Arduino Uno Microcontroller. The system uses display the warning message and buzzer to sound the alert.
NFR-3	Reliability	Highly reliable
NFR-4	Performance	The system performs well under all critical circumstance
NFR-5	Availability	Highest possible accuracy for temperature
NFR-6	Scalability	Since most high-pressure gas leaks generate sound in the ultrasonic range of 25 kHz to 10 MHz, the sensors are able to easily distinguish these frequencies from background acoustic noise which occurs in the audible range of 20 Hz to 20 kHz.

