

Project Design Phase-I

Date	1st October 2022
Team ID	PNT2022TMID38796
Project Name	Gas Leakage Monitoring and Alerting System
Maximum Mark	2 marks

Proposed Solution :

S.No	Parameter	Description
1.	Problem Statement (Problem to be solved)	Workers who are engaged with a busy industries packed with gas either harmful or harmless needs a way to monitor their gas pipelines continuously and detect early if there is any leakage of gas in their surroundings so that they can work efficiently on major crises rather than worrying about monitoring or leakage of gas, this will indeed reduce the manpower of that industry and create a peaceful environment.
2.	Scalability of the Solution	Our solution can be integrated for further future use because the solution we have provided will be lay on the basic or initial stage of any upgraded version. 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.

3.	Idea / Solution description	<p>The Gas Sensor of the MQ-x family detects the concentration of gases. Every value recorded by the sensor is checked against a threshold value. This threshold value is decided based upon the nature of the gases and also on the behaviour of the sensor. The concentration of gases are recorded by the sensor and these values are updated on a cloud platform. A call is made to the concerned authority (Admin, Fire Station, and Ambulance).</p> <p>The sensor readings that were uploaded to cloud can be used for data analytics and explosion prediction. Analytics will be performed on the sensor readings. The readings from sensors will be used for forming predictions of situations where there can be explosion. It can be worked upon which could determine such situations prior to their occurrence. Combining the gas sensor readings with the readings from temperature and humidity sensor will increase the precision of the system.</p>
4.	Novelty / Uniqueness	<p>Even though there are many existing solutions for this problem they failed to satisfy the needs of customer. Some of the solutions are only detecting some particular gases where some others failed to alert the main department and other solutions are with some delays. Our solution not only notify the industry person but also notify the fire fighters so that can take control over the situation and our solution will alert the workers even there is a small leak of gases.</p>

5.	Social Impact / Customer Satisfaction	Our solution will be very helpful for the workers and the society which is associated or located nearby the industries. Our solution will prevent great disasters like Bhopal Gas Tragedy so that so many lives can be saved. Through this project the workers mental pressure will be reduced so that they can concentrate on other works or by relaxing them.
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