**Project Design Phase-I**

**Proposed Solution**

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| Date | 19 September 2022 |
| Team ID | PNT2022TMID02412 |
| Project Name | Project - Gas Leakage monitoring & Alerting system for Industries |
| Maximum Marks | 2 Marks |

**Proposed Solution:**

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| **S.No.** | **Parameter** | **Description** |
|  | Problem Statement (Problem to be solved) | Gas leakage is a serious problem and nowadays it is observed in many places like residences, industries, and vehicles like Compressed Natural Gas (CNG), buses, cars, etc. It is noticed that due to gas leakage, dangerous accidents occur. The Liquefied petroleum gas (LPG), or propane, is a flammable mixture of hydrocarbon gases used as fuel in many applications like homes, hostels, industries, automobiles, and vehicles. |
|  | Idea / Solution description | In the proposed system, the sensor which is used to sense many gases is MQ-2 sensor. After the detection of leakage in the gas, the sensor sends the signal to the Arduino UNO for the further process where other hardware components are connected to each other. Through Arduino UNO, it sends the signal to the LCD display for displaying the alert message as GAS Detected, accordingly, the buzzer be on so that the surrounding people will the alerted. When the gas/air level in a room exceeds 50, the detection system’s buzzer and servo motor will be activated. With the use of the IFTTT (If That Then This) services, user will receive the message via Node MCU. |
|  | Novelty / Uniqueness | The MQ-2 sensor can detect numerous gases. When a gas leak is discovered, the sensor sends a signal to the Arduino UNO for further processing, during which other pieces of hardware are interconnected. It transmits the signal to the LCD display using Arduino UNO to display the alarm message "GAS" When a threat is detected, the buzzer will sound to inform others nearby. The buzzer and servo motor of the detection system will turn on when the gas/air level in a room rises above 50. The message will be delivered to the user via a Node MCU when IFTTT (If That Then This) services are used. |
|  | Social Impact / Customer Satisfaction | For those working in industry and the environment, these spills put their safety at danger and result in secondary incidents. |
|  | Business Model (Revenue Model) | By 2025, the market for gas detectors is anticipated to reach $2.96 billion, expanding at a CAGR of 4% from 2019 to 2025. |
|  | Scalability of the Solution | Numerous industrial fixed gas detectors with customizable integration, straightforward installation, and user-friendly operation |