Gas Leakage Monitoring and Alerting System

Solution Architecture

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Team ID	PNT2022TMID18123
Project Name	Gas Leakage Monitoring and Alerting System
Maximum Mark	2 marks

Problem Statement

Liquid Petroleum Gas (LPG) is a highly flammable chemical that consists of mixture of propane and butane. LPG is used for cooking at home, restaurant, and certain use for industry. They have certain weaknesses that make the gas leakage occur. The leakage of gases only can be detected by human nearby and if there are no human nearby, it cannot be detected. But sometimes it cannot be detected by human that has a low sense of smell. Thus, this system will help to detect the presence of gas leakage. Furthermore, gas leakage can cause fire that will lead to serious injury or death and it also can destroy human properties. This system was developed by using IoT to give real-time response to the user and the nearest fire station.

Solution Statement

The system can be taken as a small attempt in connecting the existing primary gas detection methods to a mobile platform integrated with IoT platforms. The gases are sensed in an area of 1m radius of the rover and the sensor output data's are continuously transferred to the local server. The accuracy of these sensors are not upto the mark thus stray gases are also detected which creates an amount of error in the outputs of the sensors, especially in case of methane. Further the availability and storage of toxic gases like hydrogen sulphide also creates problems for testing the assembled hardware. As the system operates outside the pipeline, the complication of system maintenance and material selection of the system in case of corrosive gases is reduced.

Thus the system at this stage can only be used as a primary indicator of leakage inside a plant.