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ijirset@gmail.com

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IOT Based Universal Car Protection & Accident Safety System with Android Application and Web Application

Madhuri Avhad¹, Aaditya Mane², Gaurav Shirude³, Aditya Sonawane⁴

Department of Computer Engineering, Late G.N. Sapkal College of Engineering, Nashik, India

ABSTRACT:-The explosion due to gas leakage has become a serious problem in our country's daily activities. Now the world is evolving with technology, so it is necessary to use technology if possible in every case. LPG gas to resolve the accident occurred we can prevent it through technology. The system is based on a microcontroller, which uses gas sensors as well as DHT11 (Temperature and humidity sensor), LPG gas sensor, Hydrogen gas, Alcohol Sensor. This paper is an implementation of the same using MQ-8(Hydrogen sensor) gas sensor and DHT11 temperature sensor. The DHT11 is used for measuring the humidity and temperature. The uses of the ESP 32 microcontroller provide a suitable platform for implementing an embedded control system and it is possible to modify it to meet our future requirements easily and quickly. A system, that provided security issues against thieves, leakage, and accidents.

KEYWORDS:LPG gas detection, DHT11, Alcohol Sensor, Hydrogen Gas Sensor

I. INTRODUCTION

This project proposes a flexible and reliable way of detecting the leakage of LPG. This project proposes a flexible and reliable way of detecting the leakage of LPG. In homes, LPG is used mainly for cooking purposes. When a leak occurs, the leaked gases may lead to an explosion. Gas leakage leads to various accidents resulting in both material loss and human injuries. Home fires have been occurring frequently and the threat to human lives and properties has been growing in recent years. The main aim of this project is to monitor for liquid petroleum gas (LPG) leakage to avoid major fire accidents and also facilitating safety precautions where security has been an important issue and automatic cylinder booking without human intervention. MQ2 gas sensor is used to sense the gas leakage. MQ2 sensor module can detect LPG, smoke, alcohol, hydrogen gas etc. In this project it continuously measures the concentration of gases and the concentration is displayed on LCD 16x2. The main aim of this project is to monitor for liquid petroleum gas (LPG) leakage to avoid accidents. The system is done by interfacing ESP 32 Microcontroller. In this system, When the Detect LPG gas, the motor will stop. When the detect all sensors detect like LPG gas sensor, Hydrogen gas sensor, DHT11 sensor, Alcohol Sensor, the motor will stop and the Exhaust fan will turn on and the activates buzzer also. The ESP32 interface with Microcontroller. Through Wi-Fi, the reading will be taken on the android app, Web application. All gas sensors values Display on 20x4 LCD, Android app& web application. When only the alcohol sensor detects, the motor will stop, the Exhaust fan will not turn on and the buzzer will turn on. ESP 32 as it has inbuilt Wi-Fi module all the data is transferred to the cloud through Wi-Fi and analysis is done in mobile application and web application.

II. LITERATURE SURVEY

Ms.A.Preethi Vinnarasi M.E , Elumalai R M , Jerry Jenish, Karthik Raj.T “LPG Gas Monitoring System Using Arduino” The main aim of this project is to monitor for liquid petroleum gas (LPG) leakage to avoid major fire accidents and also facilitating safety precautions where security has been an important issue and automatic cylinder booking without human intervention. This system is also capable of booking a cylinder as and when it needed. Apart from all the above functionalities it also includes different alert mechanisms such as LCD display, buzzer and SMS notification which make the system more accurate and efficient. This system also designed to detect LPG gases. The



system detects the leakage of the LPG using gas sensor and alerts the consumer about the gas leakage. This report focuses on detection of economic fuels like petroleum, liquid petroleum gas, alcohol etc. This device is used to indicate early warning of a problem to ensure public safety. The proposed system also continuously measures the gas level values.

Ayesha Siddika , Imam Hossain “LPG Gas Leakage Monitoring and Alert System using Arduino “LPG gas leakage problem increasing day by day for the reason, designed and develop a system of LPG Gas leakage monitoring and alert system using Arduino. So this IOT based system award people to prevent accidents and safe from damage. The gas leak detector device can find application not only at residential homes but also it is applicable to hotels, restaurants and even in industries where LPG gas is used for some or the other purposes. LPG gas to resolve the accident occurred we can prevent it through technology. The system is based on a microcontroller, which uses gas sensors as well display and buzzer. It is designed for LPG Gas Leakage Monitoring and Alert System using ESP32 Microcontroller with Alcohol sensor. This device is used to indicate early warning of a problem to ensure public safety. LPG and gas sensors are used in the field of safety, health and materials. This detector is implemented successfully and is easy to use and also a low cost product. LPG gas leakage problem increasing day by day for the reason, designed and develop a system of LPG Gas leakage monitoring and alert system using ESP32 Microcontroller.

Attia, Hussain A., and Halah Y. Ali “Electronic Design of Liquefied Petroleum Gas Leakage Monitoring, Alarm, and Protection System Based on Discrete Components” LPG gas leakage problem increasing day by day for the reason, designed and develop a system of LPG Gas leakage monitoring and alert system using microcontroller. This system provides the information such as when a gas leakage is noticed, sensors of in the project are used to notice the gas leakage and immediately turns ON the buzzer for the danger indication. Buzzer is a clear indication of gas leakage. LPG gas leakage problem increasing day by day for the reason, designed and develop a system of LPG Gas leakage monitoring and alert system using ESP32 Microcontroller. The leakage is detected with the help of MQ-6 gas sensor. Sensor sends a signal to microcontroller. In the next step microcontroller sends an active signal to other externally connected devices.

III. METHODOLOGY

The main aim of this project is to monitor for liquid petroleum gas (LPG) leakage to avoid accidents. The system is done by interfacing ESP 32 Microcontroller. In this system, When the Detect LPG gas, the motor will stop. When the detect all sensors detect like LPG gas sensor, Hydrogen gas sensor, DHT11 sensor, Alcohol Sensor, the motor will stop and the Exhaust fan will turn on and the activates buzzer also. The ESP32 interface with Microcontroller. LPG gas leakage problem increasing day by day for the reason, designed and develop a system of LPG Gas leakage monitoring and alert system using ESP32 Microcontroller. The leakage is detected with the help of MQ-6 gas sensor. Sensor sends a signal to microcontroller. In the next step microcontroller sends an active signal to other externally connected devices. A mobile gas sensing robot can be constructed to sense the leakage of gas through pipelines as the robot can move on a track which is situated along the length of pipeline.



• **BLOCK DIAGRAM:**

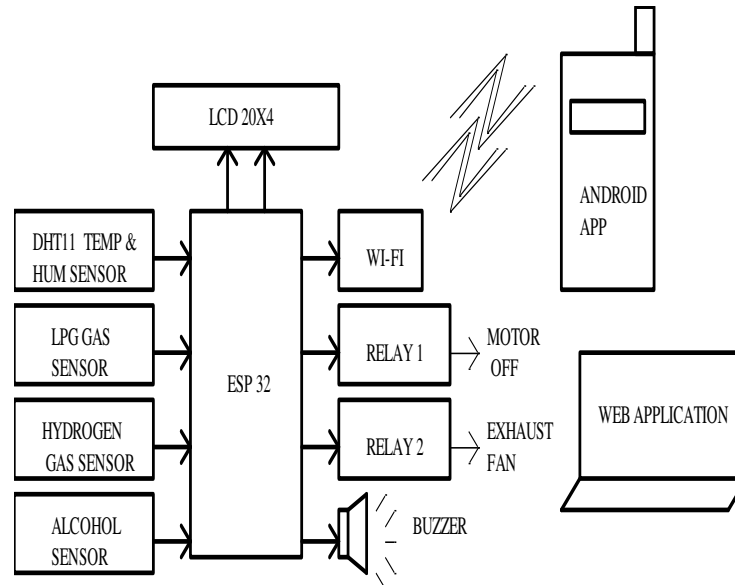


Fig 1: Block diagram

IV. CONCLUSION

Its ability to warn its stakeholders about the leakage of the LPG gas. In this paper we have considered different aspects of LPG leakage and weight monitoring mechanism and came up with a cost-effective. Apart from all the above functionalities it also includes different alert mechanisms such as LCD display, buzzer. This project performance can conclude that detection of the LPG gas leakage is incredible in the project system. Applicable usefully in the industrial and domestic purpose.

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BIOGRAPHY



Madhuri R. Avhad, student of late G.N.Sapkal college of engineering department of computer engineering



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Aadity K. Mene, student of late G.N.Sapkal college of engineering department of computer engineering



Gaurav V. Shirude, student of late G.N.Sapkal college of engineering department of computer engineering



Aditya A. Sonawane, student of late G.N.Sapkal college of engineering department of computer engineering



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