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LPG GAS LEAKAGE DETECTOR

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ABSTRACT: As we know, security has been major issue in today's scenario. LPG is main source of all fuel, gas leakage is a major problem in the industrial areas. Home security has become a major issue because of increasing gas leakage. One of the preventive method to prevent accidents associated with the gas leakage is using gas leakage detection kit. The aim of this paper is to introduce and design a gas leakage detection that will automatically detect, alert control the gas leakage. The system is based on a sensor that can detects gas leakage easily.

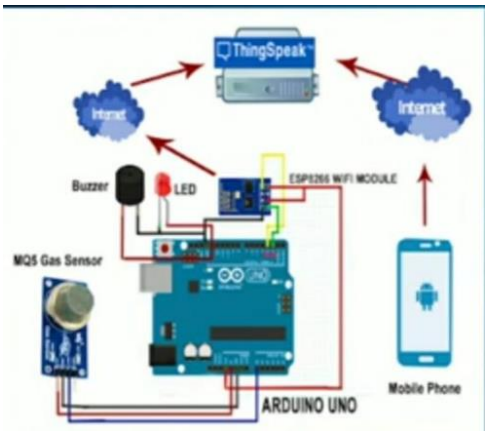
KEYWORDS: LPG, Buzzer, Sensor, Gas leakage, Microcontroller.

INTRODUCTION:

Gas leakage detection is by Sensors – Gas Leakage detection is the process of identifying potentially hazardous gas leaks by mean of various sensors. These sensor usually employ an auditable alram to alert people when Dangerous gas has been detected. The total circuit units are arranged on Breadboard. So this project deals with finding the level of gas in the cylinder and sending this information for booking of the new LPG cylinder when the gas level is low and this project also deals with the detection of gas leakage and automatically turning off the gas valve if there is leakage of gas. When there is gas leakage and the gas level in the cylinder goes below the threshold level then the output of the sensor is sent to the microcontroller and the buzzer is turned on and also it will be displayed in the user's phone. We can also turn on and turn off the gas valve through our mobile phones.

CONNECTION WITH IOT:

Steps for creating project:
1. Hardware connection.
2. Configuring thing speak cloud for uploading sensor.
3. Make changes to code and upload.
4. Posting to push bullet via thing speak for Getting push notification on android.



WORKING OF CIRCUIT:

Our idea is to make a very accurate and cheap detector which gives the precise readings, we have interfaced mq135 with Arduino. Module mq135 detects the gas leakage. Along with the Arduino board we have interfaced buzzer. The basic concept is as soon as gas leakage is sensed the buzzer goes on with the sound of beep. If somebody is away from the point of leakage of gas it will alert the person from disastrous. Along with we have interfaced 16*2 LCD with data pins, this LCD is used for displaying the status of gas leakage. This is useful for those who are deaf. Additionally we have connected GSM module for those who are not press on the location it will send an alert message.

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APPLICATIONS:

- The project may be applied to the gas industries.
- Muncipal gas distribution.
- Nuclear power station.
- Mining of coal and other materials.
- The applications of LPG leakage detector mainly applicable in domestic gas leakage detector, industrial combustible gas detector, houses, portable gas detectors, LPG storage, factories, hotels and gas cars.
- The system detects the leakage of the LPG using a gas sensor and uses the GSM to alert the person about the gas leakage via SMS. When the concentration of LPG in air exceeds a certain level, the sensor senses the gas leakage and the output of the sensor goes LOW.

CONCLUSION:

Gas escape could result in severe accidents which ends in material losses and human injuries. Gas escape happens chiefly because of poor maintenance of apparatus and inadequate awareness of the individuals. Thus LPG escape detection are useful to stop accidents and to avoid wasting human lives. This paper conferred LPG escape detection and alert system. This technique triggers buzzer and displays the severity of the escape to alert individuals once LPG escape is detected. This technique is incredibly straightforward nevertheless reliable this monitoring and detection system is proposed mainly to meet the safety standards and to avoid fire accidents because of gas leakage. This system provides quick response rate and the diffusion of the critical situation can be made faster than the manual methods. It was experience in making this project as this project consist of so many components hence it give a chance to know about various electronics components. Whenever there is LPG concentration of 1000 ppm (parts per million) in the area, the OUT pin of the sensor module goes high.

Smart LPG Gas Level Detection and Safety System using IOT

Abstract:
Liquefied Petroleum Gas (LPG) is widely used in households, but the consumer is unaware of the daily rate of consumption and the time frame when he/she needs to book a refill. Gas leakages results a serious problem in household and other areas where household gas is used. So in this project, we present an Internet of Things (IoT) based system which monitors different aspects related to LPG cylinder, and thereby keeps the consumer updated via a mobile application.

INTRODUCTION:

In our day to day life, LPG cylinder plays a major role. LPG is an odourless gas which is a mixture of propane and butane. It contains both saturated and unsaturated hydrocarbons. Ethyl Mercaptan is the stanching agent which is used to impart odour to the odourless LPG. LPG is liquefied under moderate pressure and has replaced many conventional fuel systems in household and commercial sectors. Though it is one of the most commonly used fuels, it has an explosive range of 1.8%–9.5% volume of gas in air. The main application of the LPG is that it is used in the place of chlorofluro carbon which cause great damage to the ozone layer. LPG is packed into 3 categories according to the weight of the LPG in the cylinder: Household, Commercial and Industrial. The Household category of LPG cylinder contains 14.2 kg LPG in the cylinder. Similarly, the Commercial and Industrial categories of LPG cylinders contain 19 and 35 kg of LPG respectively.

CONCLUSION:

In this project, the idea proposed would be another step towards home automation. This system would considerably reduce human intervention in the booking or monitoring of the LPG cylinder and hence will save much time or the hastiness in booking the LPG cylinder. Additionally, it will also ensure human safety by preventing accidents due to gas leakage by turning off the gas valve when there is gas leakage. With appropriate configuration this system can also be scaled for its use in industries where heavy pipelines and cylinders are used. The proposed system when successfully implemented can also be used in mines where gas sensors will detect leakage of toxic gases and can send a signal for the emergency evacuation of workers.

RESULT:

When there is gas leakage it is detected and the gas valve is turned off automatically and an alert is given to the user and also the buzzer is turned on. When the gas level in the cylinder goes down below the threshold level i.e. 5% then an alert is given to the user and also the buzzer is turned on. The gas valve of the cylinder can be turned on and off using the mobile app.

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