SMART KITCHEN USING IOT

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Abstract: Although much of the work has been done until today to realize the Internet of Things (IoT) into practice, most of the work focuses on resource constrained nodes, rather than linking the existing embedded systems to the IoT network. The Internet of things (IoTs) is a network of physical objects or things embedded with electronic, software, sensors and connectivity to enable objects to exchange data with manufacturers, operators and connected devices. It can be described as connecting everyday objects like smart phones, sensors and actuators to the Internet where the devices are intelligently linked together enabling new forms of communication between things and people, and between things themselves. IoT allows objects to be sensed and controlled remotely across existing network infrastructure. It also provides efficiency, accuracy, comfort and economic benefit. Now anyone, from anytime and anywhere can have connectivity for anything and it is expected that these connections will extend and create an entirely advanced dynamic network of IoTs. Our work here tries to enhance the Internet oriented approach with semantic oriented methods, both of which are required to build practical, complex IoT applications, which are expected on rich embedded devices.

Keywords: **Gas sensor, load cell, Buzzer, motor, LCD display**.

INTRODUCTION

IoT has changed the life of human beings. Enormous increase in users of the Internet and modifications on the internetworking technologies enable networking of everyday objects. Each thing is uniquely identifiable through its embedded computing system within the internet infrastructure. Internet of Thing is all about physical items talking to each other, machine-to-machine communications and person-to-computer communications will be extended to things. We proposed the design and construction of an SMS based Gas Leakage Alert System. Gas sensors were used to detect gas leakages in a kitchen; its outputs are then interfaced with an NODE MCU microcontroller programmed in lua language. Gas is a leading source of energy used for heating and cooking purposes in our homes. The two major types of gas which serve these purposes are liquefied petroleum gas (LPG) and natural gas. This project aims at providing a safety assuring system that will detect the LPG leakage and the valve of the cylinder turns off automatically. The proposed system with its weighing sensor helps to measure the cylinder weight. Gas leakage detection is a method of identifying dangerous gases in the surrounding environment by the use of sensors, thereby leading to prevent further consequences. The ignition of these leaked gases may lead to explosion. The number of death reports caused by gas leakage explosions has been enlarged in recent years The reason behind such explosions is mainly due to the old cylinder valves, drained out regulators, shortage of substandard cylinders, and lack of knowledge of using gas cylinders add to the danger. The main aim of the Internet of things is to make life easier by automating every task around us. Safety has been an important thing for designing homes, buildings, cities and Industries. Although the steps taken for this issue even though accidents are gradually increased due the leakage of gas. This Work is one step for avoiding fire accidents due Leakage of gas**.**

PURPOSE

The design of a gas leakage monitoring system is proposed for home safety. This system detects the leakage of the LPG and alerts the consumer about the leak by SMS and as an emergency measure the system will turn off the power supply, while activating the alarm. The additional advantage of the system is that it continuously monitors the level of the LPG present in the cylinder using load sensor and if the gas level reaches below the threshold limit of gas around 2kg.The device ensures safety and prevents suffocation and explosion due to gas leakage and software monitors all the functionality of software.

EXISTING SYSTEM

When things like household appliances are connected to a network, they can work together in cooperation to provide the ideal service as a whole, not as a collection of independently working devices. This is useful for many of the real-world applications and services, and one would for example apply it to build a smart residence.

1.   DRAWBACKS OF EXISTING SYSTEM

•   **Less User Friendly:** The existing system is not user friendly because the retrieval of day-to-day activities data/records is very slow and records are not maintained efficiently and effectively.

•   **Complex for generating the report:** We require more calculations and efforts to generate the report so it is generated at the end of the session. And the student does not get a chance to improve their attendance.

•   **Lengthy time:** Every work is done manually so we cannot generate report in the middle of the session or as per the requirement because it is very time consuming.

2.   PROPOSED SYSTEM.

While LPG is important for each social unit, its leak may lead to a disaster. To alert on LPG leak and forestall any miss happening there square measure varied product to observe the leak. If a gas leak happens, this technique detects its associated degreed makes an alert by a buzzer hooked up with the circuit. This proposed method consists of gas leakage detection system, weight measurement module, microcontroller, Wi-Fi module and alert system. The main basic NODE MCU micro controller requires the power supply ranging from 7- 12 volts. The board can operate at 7-12 volts. The other main component used is the Load cell. A load cell is a transducer that is used to convert a force into an electrical signal, which is used to measure a LPG gas cylinder weight. The Gas Sensor is also one of the components used to detect the leakage of the LPG Gas which converts one form of the signal into other form to avoid the noise of alcohol and cooking fumes and cigarette smoke. The MQ-6 can detect LPG gas concentrations from 100 to 10000ppm .LCD (Liquid Crystal Display) is used to show the output of the results of cylinder weight and gas sensor value. As, node mcu consist of inbuilt wifi module the data is sync to thingspeak it a cloud computing platform the through twilio the data is from synced then the buzzer gives the alert signals also the motor turns the regulator off then twilio helps to alert the user by sending SMS (Short Message Service), EMAIL about Gas Leakage and LPG Gas Completion Status
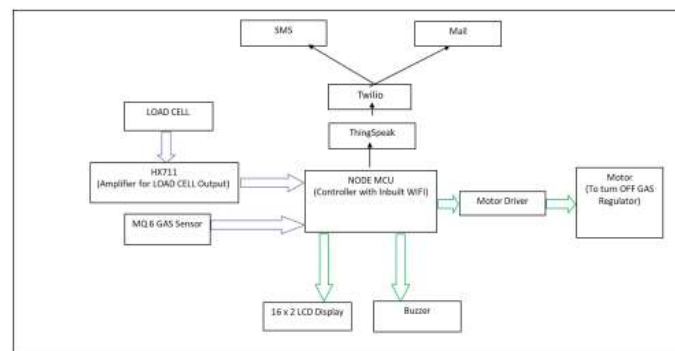
SYSTEM ARCHITECTURE

Fig -1: System Architecture Diagram

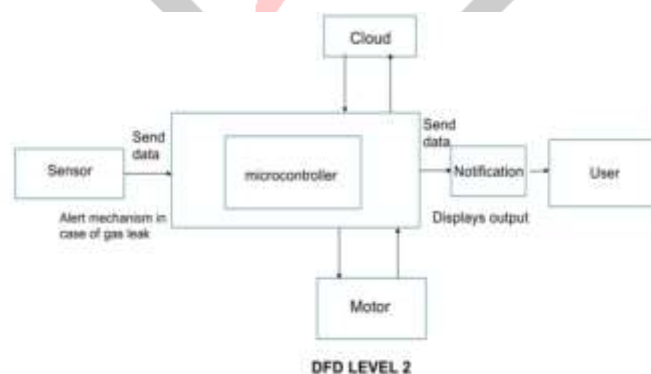## ADVANTAGES
1.   Innovative.
3.   Centralised Database.
4.   Easy to use.
5.   Efficient cost.

APPLICATION:
1.   Home.
2.   Organizations.

DATA FLOW DIAGRAM

DFD LEVEL 2

METHODOLOGY

The single problem can be solved by different solutions. This considers the performance parameters for each approach. Thus considers the efficiency issues:

1.   Problem Solving Methods are concerned with efficient realization of functionality. This is an important characteristics of Problem Solving Methods and should be deal with it explicitly.

2.   Problem Solving Methods achieve this efficiency by making assumptions about resources provided by their context (such

as domain knowledge) and by assumptions about the precise definition of the task. It is important to make these assumptions explicit as it give the reason about Problem Solving Methods

3.   The process of constructing Problem Solving Methods is assumption-based. During this process assumptions are added that facilitate efficient ope rationalization of the desired functionality
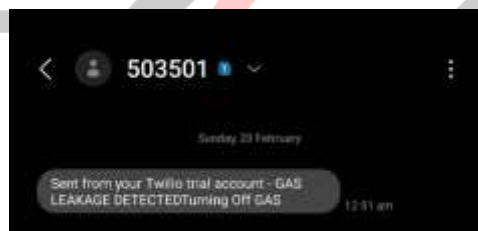
4. **RESULTS:**

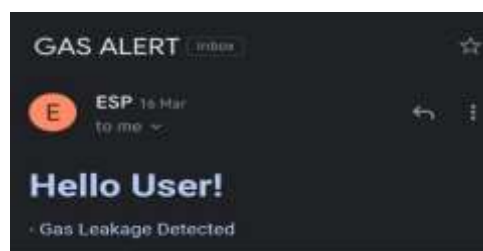Hardware implementation:
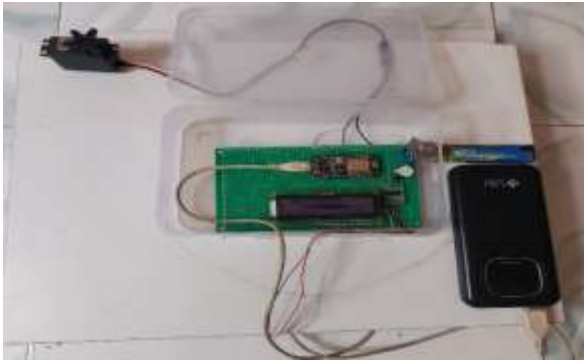
Dashboard

SMS alert:

Email alert:

5. CONCLUSION

Our system will detect the leakage of the gas, in case there is any leakage it will send a SMS to the owner and it will turn off power and activate an alarm. The system will continuously monitor the weight of the gas. Gas leakage leads to severe accidents resulting in material losses and human injuries. Gas leakage occurs mainly due to poor maintenance of equipment and inadequate awareness

of the people. Hence, LPG leakage detection is essential to prevent accidents and to save human lives. This monitoring and detection system is proposed mainly to meet the safety standards and to avoid fire accidents because of leakage. In simulated fires and gas leaks a warning system can work. Email and SMS can be received directly by the mobile device. Thus, the concept of IoT based Smart Kitchen and Avoiding Fire Accidents Due Leakage of LPG Gas is applied and verified experimentally. The Output data of this system is continuously transferred to the User in the IoT cloud data Transfer Process.

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