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# IoT Based Smart Home Automation System

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**ABSTRACT:** Internet of Things (IoT) conceptualizes the thought of remotely connecting and monitoring world objects (things) through the web. When it involves our house, this idea is often aptly adopted to form like it smarter, safer and automatic. This IoT project focuses on building a sensible wireless home security system which sends alerts to the owner by using Internet. Besides, an equivalent also can be utilized for home automation by making use of an equivalent set of sensors. To propose an easy and versatile design for house monitoring and automation. This system uses cloud server to collect data from sensor nodes using the IOT principle. Collected data are often displayed, archived or processed and went to control devices within the house. The embedded system combined with the Wi-Fi was used as the main processing unit that collects data.

**KEYWORDS:**Security, House Monitoring, IoT.

## I. INTRODUCTION

In today lifestyle electricity is every one basic need and consumption and resources of energy is increases day by day. Usage of power is also increasing that's why prevention is better than cure awareness of energy consumption should be brought into every place before resources get extinguished. And in now day's technology is the most important part human's life. By using this technology social interaction of peoples growing. Technology are also use for transportation, internment and in medical field it's also usage for creation of many devices like mobile phones, computers laptops have caused many people are connected to technology to speak with their friends, family access and store the knowledge like document movie music and movie. The internet has become the basic interface for many devices use to simplify the daily life of many peoples.

Internet helps us to take immediate solution for many problems and also able to connect from any of the remote places which contributes to overall cost reduction and energy consumption. The designed system will help in reducing the energy wastage by continuously inspect devices and controlling the electrical appliances. Smart Home or home automation introduces technology for home atmosphere which is usage to supply ease and protection to its occupants. By using the technology of the web of Things, the web of things (IoT) is that the network of physical devices, vehicles, buildings and other items embed with electronic, software, sensors, actuators, and network connectivity that enable these objects to gather and exchange data.

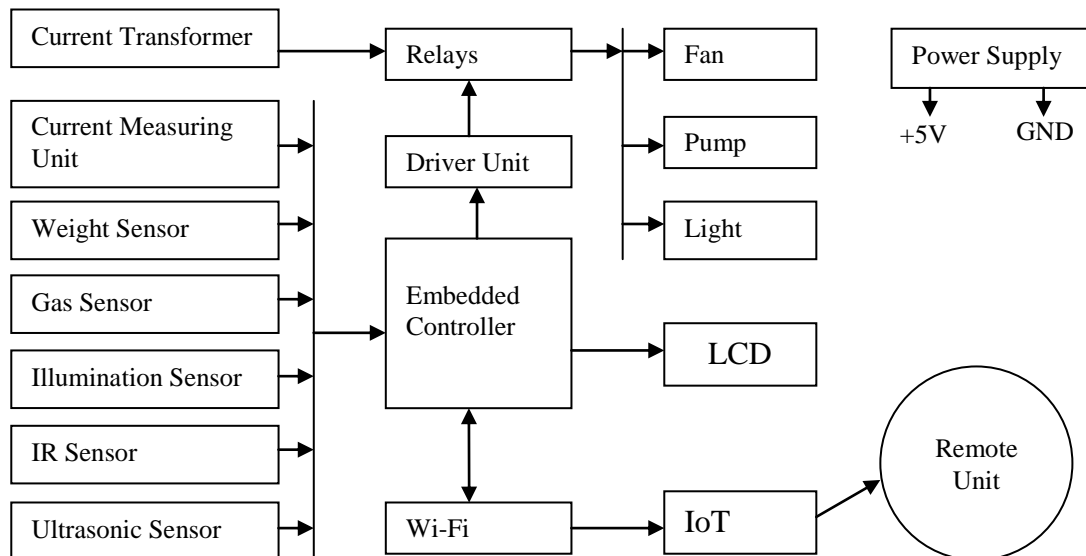
## II. SYSTEM MODEL

To proposes a simple and flexible design for house monitoring and automation. This system uses a cloud server to collect data from sensor nodes using the IoT principle. Collected data can be displayed, processed and used to control major devices in the house. The project consists of four major divisions as follows,

1. Home Controlling and Monitoring Devices,
2. Power Supply and Control Unit,
3. Output from IOT Devices,
4. IOT Control Devices.



**BLOCK DIAGRAM**



**III. HOME CONTROLLING AND MONITORING DEVICES**

This home security system doesn't use any smart-phone application or any sort of interface instead uses digits from the keypad on the phone, the system is platform independent and hence are often accessed from a good range of phones with different operating systems. The optional smart phone application takes care of the very fact that the user can regulate his home appliances without sensors being triggered. They consist of the various devices to monitor the parameters such as

- Power Measurement
- Weight
- Toxic Gas
- Illumination
- Security

**IV. POWER SUPPLY AND CONTROL UNIT**

All electronic circuits' works only in low DC voltage, so we'd like an influence supply unit to supply the acceptable voltage supply for proper functioning. The board gets powered up by externally connected 12V battery or 12V adapter. The home appliances are connected to mains through relay which successively is connected to a different digital pin of the board. The board is programmed to have access to the IoT system. The voice call feature of the mobile should be enabled. This unit consists of transformer and regulator. The control unit is the one which consist of a microcontroller for the whole operation of the project. Thus, they act as the brain used for the conversion of the output from the sensors for the comparison of reference.

**V. OUTPUT FROM IOT DEVICES**

Android app is a one through which the data is viewed for additional features such as contact details. The optional smart phone application takes care of the fact that the user may also wish to control his home appliances without sensors being triggered. To operate home security system, the user needn't have data connection enabled in his phone. The system runs with the embedded controller connected to Wi-Fi at home.



**VI. IOT CONTROL DEVICES**

The IoT based Home Automation will enable the user to use a Home Automation System supported Internet of Things (IoT). The modern homes are automated through the web and therefore the home appliances are controlled. The user commands over the web are going to be obtained by the Wi-Fi modems.

Advantages of using IoT :

- Effective Customer Engagement
- Technology Optimization
- Reduced Waste

**V. RESULT AND DISCUSSION**

In the fig 1, the web page view of home automation control has been carried over. By entering the credentials in the webpage by visiting <http://iotproject19-20.000webhatsapp.com/homeautomation>

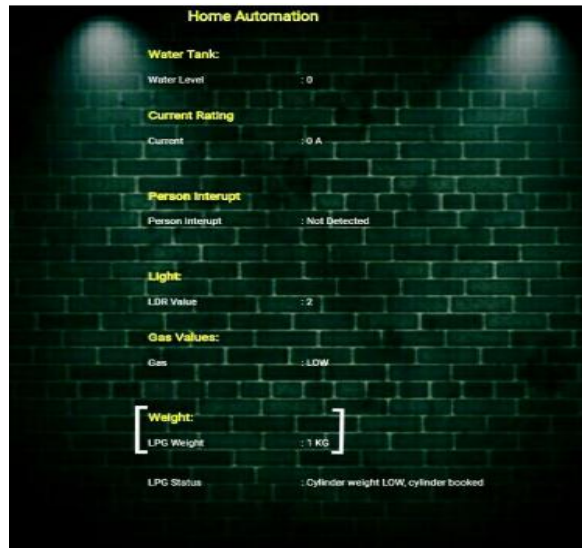


Fig. 1 Weight of Gas in web page

In fig.2 Gas sensor senses the leakage of gas. In the lcd display the letter ‘s’ denotes the smoke intimation. Weight sensor measure the weight of the gas cylinder. In the lcd display the letter ‘w’ denotes weight of the gas. Ultra sonic sensor measures the water level of the pump. In the lcd display the letter ‘LV’ denotes the level of liquid. Illumination is measured by using LDR. In the LCD display the letter ‘LG’ denotes gap value of light and the letter ‘c’ denotes the current from line.

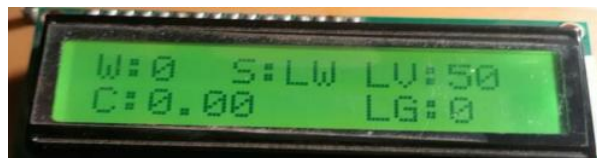


Fig. 2 LCD Display

**VI. CONCLUSION**

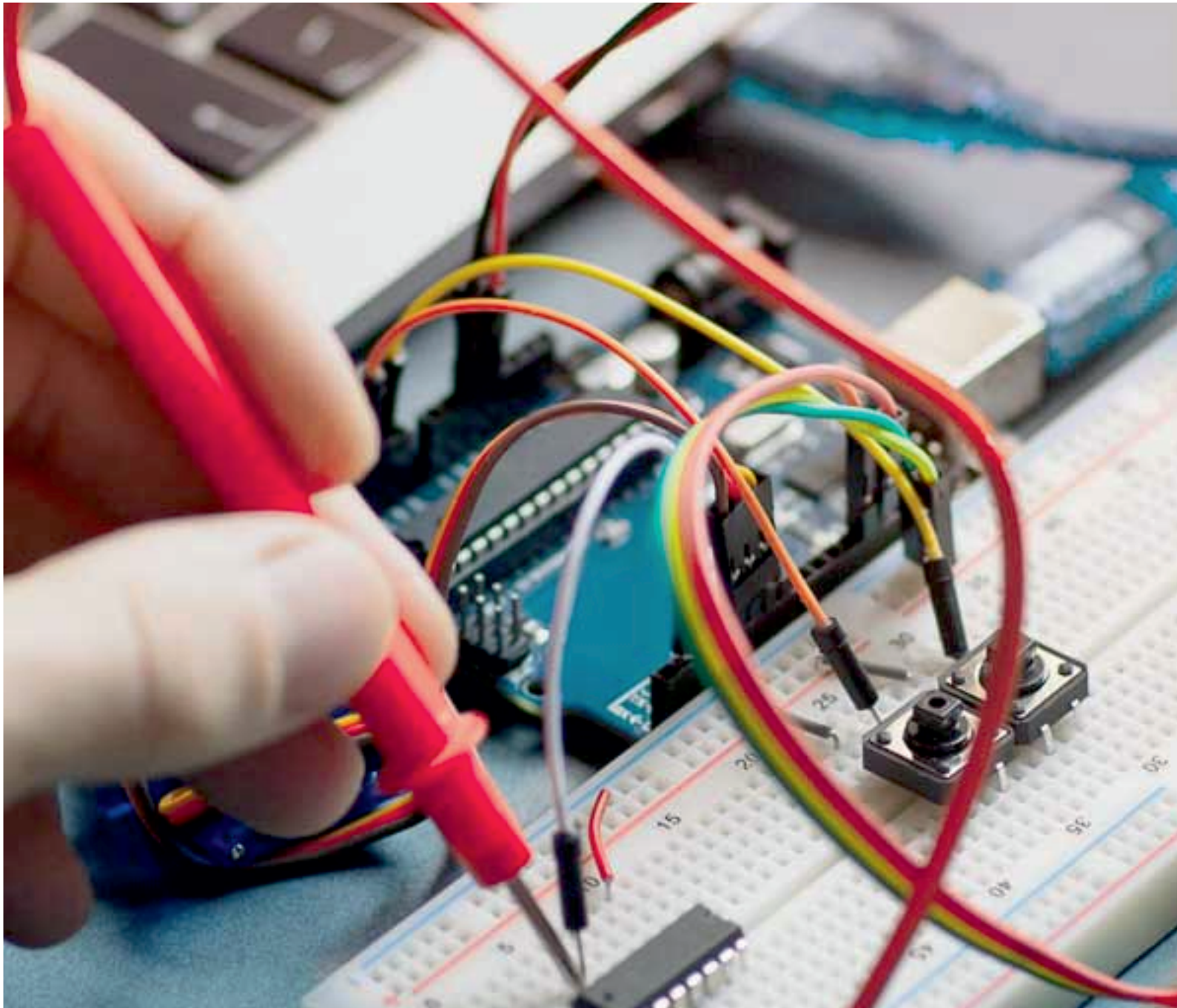
A new automation system with an online feature is done for home automation. The IOT based home automation as stated can provide solution to the difficulties of traditional home automation. With the execution of the IOT network system which is as of now accessible it's on the way to eventually achieving the benefits of remote automation and control of an electrical system. The system has been tried and observed to be solid and dependable. In future, with



advanced AI systems, it'll permit automatic judgment and secure the house. Therefore, it avoids human intervention, reduce wasting electricity, provide an efficient controlling system and also helps to decrease the upkeep cost.

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