

A REVIEW PAPER ON KITCHEN MONITORING SYSTEM USING EMBEDDED WEB SERVER

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Abstract - With advancement of automation technology, life is getting simpler in all aspects. Rapid increase in the number of users of internet over the past decade has made internet a part of life and IoT is the latest internet technology. Wireless kitchen automation system using IoT is a system that uses computers or mobile devices to control the basic kitchen functions and features automatically through internet from everywhere around the world.

The development and design of the wise monitoring and controlling system for kitchen atmosphere instantly continues to be reported within thin paper. The machine can monitor the status of kitchen and send an alert information via IOT network instantly, when the conditions get abnormal, to some concerned government bodies cell phone, the ARM 7 LPC 2148 microcontroller is utilized within the implementation of sensor module. The machine primarily monitors kitchen atmosphere parameters for example light intensity, room temperature, fire detection, LPG gas level and motion detection, and continues to be developed.

Key Words: Embedded web server, ARM Microcontroller, Remote monitoring sensor module, mobile phone.

1. INTRODUCTION

Kitchen monitoring becomes more advantageous for safety, security and luxury of individuals. Every day the modern people expect new device and new technology to simplify their day to day life. The innovators and resembles are always trying to find new things to satisfy the people but the process is still infinite.

Nowadays, kitchen automation became modern and precise to monitor the fields. In the 2000s, Internet connectivity became the type for many applications and today is expected as part of many enterprise, industrial and consumer products to provide access to information. However, these devices are still primarily things on the interaction and monitoring through apps and interfaces. With the advancements in Internet technologies, and wireless sensor network (WSN), a new trend in the era of ubiquity is being realized.

Enormous increase in users of internet and modification on the internet working technologies enable networking of everyday objects. This system finds a wide application in areas where physical presence is not possible all the time. The system offers a complete low cost, powerful and user friendly way of real-time monitoring and remote control of kitchen.

2. LITERATURE REVIEW

2.1 Smart Home Monitoring And Controlling System Using Android Phone.

In this project, it describes a zigbee module and android based home monitoring system for security, safety and healthcare for human. This system is flexible and can be implemented in many research areas. This paper introduces a smart home system which could surprise household appliances remotely and realize real-time monitoring of home security status through mobile phone. The personal computer is used to monitor the various parameters in the proposed system. Android Phone is main advantage compared to personal computer for using any place.

2.2 Smart Kitchen Cabinet For Smart Home.

This paper describes a conceptual design of a smart kitchen cabinet. This system incorporates grocery item identification, inventory management of grocery items and automatic generation of shopping list. The smart kitchen cabinet consist of two different sections each leveraging two sensing mechanisms: weight sensing section consist of fixed size container having RFID tag defining container size with product description RFID tag reader, and ultrasonic level sensor for measuring the level of contents in the container. RFID tag reader, and weight sensor meaning all the contents on that shelf.

The embedded sensor measure the weight or the level of the items which in updated to the database whenever grocery items are placed or taken out for cooking. When the items reach the predefined threshold level, the system generates the automated shopping list.

2.3 Design & Implementation Of Kitchen Monitoring System By Using Wireless Sensor Network.

The design and development of a smart monitoring and controlling system for kitchen environment in real time has been reported. The system detects kitchen parameters each as room temperature, fire detection, motion detection has been developed. The system can detect the status of kitchen and send alert message via network automatically. If the conditions get abnormal, the concerned authority can control the system through this mobile phone by sending proper decision in user GSM. Users can monitor and control. The system offers low cost, complete powerful and user friendly way of real-time monitoring and remote control of kitchen.

2.4 Wireless Sensor Network Based Smart Home : Sensor Selection, Development And Monitoring

This paper details the installation and configuration of unobtrusive sensors in an elderly person's house - a smart home in the making - in small city in New Zealand. The novelty of this project is that instead of setting up an artificial test bed of sensor within the University premises. The sensors have been installed in a subject's home so that data can be collected in a real, not artificial environment. The applications are not limited to solely monitoring but can be extended to behavioral recognition. The methods of collecting data efficiently and have led to novel applications for indoor wireless sensor networks.

In this project, the technological development provides and increase human beings safety and comfort directly and indirectly. For this purpose developing technologies directly affects the life standards by means of smart home systems design. It is possible to classify smart home systems into two as local and remote. A smart home automation system design was carried out by using Delta DVP28SV model PLC i.e. programmable logic controller. A smart home system can be controlled in the two different ways either by any internet-connected device on an operator panel assembled on PLC, control of the ventilation, lighting and security units in the smart home were carried out. Unusual circumstances occurred in security units have been reported to the user with sms.

3. PROBLEMS IN PREVIOUS RESEARCH

In existing system, cost is effective, as we know most of systems are using GPRS system is expensive as compare to wi-fi concept but those architecture are mostly use Raspberry pi which is expensive in cost. Still home automation system is not having some basic features like automatic control of outside light.

4. DESCRIPTION OF PROPOSED WORK

The design of different parameters are proposed for kitchen safety. The system can monitor the status of kitchen and send the details about all parameter on network automatically. Users can monitor and control transducers on active web pages enhanced with embedded C. This system finds wide applications in area where physical presence is not possible all the time. The system offers a complete low cost, powerful and user friendly way of real time monitoring and remote control of kitchen.

5. ADVANTAGES

1. Automation in monitoring and controlling.
2. Less manual effort.
3. Less complexity.
4. Less maintenance.

6. APPLICATIONS

1. Integration of security services.
2. Food processing units.
3. Home and hotel kitchens.

7. CONCLUSION

This project presents the design and implementation of an interactive kitchen monitoring kitchen monitoring system with the control, communication and web-enabled measurement and control systems. The web based monitor and automatic control of equipment is forming a trend in automation field. Replacing PC with low-cost single chip processor can make administrators to get parameters of different remote sensor and send control information to field equipments at any time through Internet. The complete system is secured through a login and Webpage password based authentication.

The design is completely wireless and integrated with the software to form a low cost, robust and easily operable system. Communication makes the system easy to install. The Wi-Fi and Web based controlled duplex communication system provides a powerful decision making device concept for adaptation to several smart kitchen Scenarios.

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