Smart Home Monitoring and Controlling System Using Android Phone

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Abstract – Our project describes a zigbee module and android based home monitoring system for security, safety and healthcare for human. The existing system provides security and safety or healthcare system but in my project provide combination of these two systems. This system is more flexible and can be implemented in many research areas. This paper introduces a smart home system which could supervise household appliances remotely and realize real-time monitoring of home security status through mobile phone. This paper mainly focuses on the monitoring and control of smart home remotely and providing security, when the user is away from the place. The personal computer is used to monitor the various parameters in the proposed system. In this system android phone is used to monitor and control the various parameters. Android phone is main advantage compared to personal computer for using any place. To monitor the various parameter using zigbee, that has viewed by lab view and then controlled using android phone.

Key word – Home automation, Zigbee, Android phone

I. INTRODUCTION

Home automation is become more advantageous for safety, security. An embedded board physically connected all home automation devices and through integration with a personal computer (PC) based web server, provided remote access to the system. We are going to use these wireless sensors for home monitoring.

Nowadays, home automation became more modern and precise to monitor the fields. There are so many challenges in the modern home automation such as Temperature, gas, light, fan, obstacles and human healthcare for smart home. This paper concentrates smart home monitoring using sensors.

The physical parameters such as temperature and gas for the kitchen, Light and Fan for the bed room, obstacle sensor used as some important places and the human healthcare should be closely monitored. For this there are three sensors are used. Using embedded c and lab view programming part has been done.

II. RELATED WORK

Physical Parameters of the home are sensed by data acquisition system. Data acquisition has been done using sensor nodes. A node contains three sensors. The sensors are used for monitoring the physical parameter measurements. In the home monitoring, the parameters such as kitchen temperature, gas and obstacle are monitored.

These parameter measurements are gathered and processed using digital signal processing. In digital signal processing, the analog signals generated from the sensor nodes are converted into digital signals. Again the digital signals are converted into analog signal. The analog signals from various sensor nodes are transmitted to the local home monitoring server using zigbee. From the local server the data has been sent to the remote view through the network interface. The general structure of the sensor node is given in figure 1.

Fig 1 General Structure

III. PROPOSED WORK

A. Local Monitoring Server

The sensor node is responsible for gathering, processing and transmitting the measurement data periodically to the local home monitoring server with embedded web support. The architecture of the local server module is given in figure 2.
The local monitoring server sends the home appliances output using graphical user interface. Wi-Fi network is used for the communication between local monitoring server and Android device. The architecture of remote view using Android module is given in figure 3.

**C. Obstacle**

The gp2d12 is used for measuring the human movement. The gp2d12 is a distance measuring sensor with integrated signal processing and analog voltage output. The small and rather inexpensive infrared device is able to measure distance between 10cm to 80cm.

**F. Wireless transmission using embedded gateway**

The above parameters are gathered and processed by microcontroller and transmitted to local monitoring server. These outputs are monitored in any other places for using Android portable devices.

**V. CONCLUSION AND FUTURE WORK**

In the future all electrical appliances and human body health condition should be involved and this has successfully monitored and controlled using lab view.

**REFERENCES**


