

A REVIEW PAPER ON “HOME AUTOMATION VIA WI-FI TECHNOLOGY PLUS”

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ABSTRACT

The aim of this review paper is to summarize design implementation of new home automation system that uses Wi-Fi technology as a network infrastructure connecting its parts. Users and system administrator can locally (LAN) or remotely (internet) manage and control system code. The paper highlights the concept of controlling devices through Wi-Fi module.

KEYWORDS: Automation, network, control system, Wi-Fi module.

I. INTRODUCTION

Earlier there was a manual way of holding the appliances. However with the automation of technology, there comes advance way of doing it. If we conduct survey on busy livelihood then we can make out that Today's home require sophistication control in its different gadgets which are basically electronic appliances. This has revolutionized the area of home automation with respect to an increase level of affordability and simplicity through the integration of home appliances and say, with Wi-Fi connectivity.

II. SYSTEM OVERVIEW

Home Automation (also known as domotics; frequent for informatics, telematics and robotics) is the residential extension of building automation and involves the control and automation of lightning, heating, ventilation, air conditioning and security as well as home appliances such as washer/dryers, ovens or refrigerators/freezers that use Wi-Fi for remote monitoring.

III. DEVELOPMENT PLATFORM

Home Automation began with labor-saving machines. Self-contained electric or gas powered home appliances became viable in the 1990s with the introduction of electric power distribution and LED to the introduction of washing machines. In 1975, the first general purpose home automation network technology, X10 included a 16 channel command console, a lamp module and an appliance module. By 2012, in the United States, according to ABI Research, 1.5 million home automations were installed. After then there are three generations of home automation, examples of which are Zigbee automation, amazon echo, Robot Rovio., etc.

IV. RELATED WORKS

[1]. ESP8266 Wifi Controlled Home Automation by Geekrex in Android.

His work merit ESP8266 in one line that “it is a great thing for starting to Wi-Fi and IoT”. The project claimed ESP8266, capable of hosting or offloading all Wi-Fi networking functions from another application processor. In simple words, we can simply hook this up to our Arduino board and get about as much Wi-Fi for controlling appliances.

[2]. Web and cloud based home automation system.

The paper proposes an implementation of IoT (Internet of Things) based smart home automated system to remotely control the home appliances using Wi-Fi. A low cost Wi-Fi module ESP8266 along with ATmega 328 MCU is used to build Smart Units. The user can remotely operate home appliances like lights, fan, door lock etc. through Telnet. The lights in any room can be controlled from any place in the house, within the wifi range, through telnet by using a single keyword. Arduino Pro mini is used as a compiler. Telnet will be connected with home access point using one IP address. So the concept of IoT is being used.

[3]. Device-to-Device Communications in Wireless Sensor Networks Guest Editors: Yujin Lim, Gianluigi Ferrari, Hideyuki Takahashi, and Màrius Montón

The paper presents design and implementation concepts for a wireless real-time home automation system based on Arduino Uno microcontroller as central controllers. The proposed system has two operational modes. The first one is denoted as a manually-automated mode in which the user can monitor and control the home appliances from anywhere over the world using the cellular phone through Wi-Fi communication technology. The second one is referred to a self-automated mode that makes the controllers to be capable of monitoring and controlling different appliances in the home automatically in response to the signals comes from the related sensors.

[4]. Internet of Things (IoT) over Future Internet -Waseem Ahmad David, Mundow

Their paper coordinate with wireless technology. Wireless Technology is mostly used for building automation, remote control, meter reading, security systems, etc. A Wi-Fi designed and implemented by ElShafee and Hamed [5]. The proposed system can be scalable and one server was able to manage many hardware interface modules as soon as they existed on Wi-Fi network coverage.

V. EXPOSURE TO THE FOLLOWING TECHNOLOGIES

Wi-Fi., Interfacing of Wi-Fi module and Microcontroller, Embedded C Programming, Conversion of AC supply to DC supply, Design of PCB, LCD interfacing.

VI. CONCLUSION

HAS has revolutionized the area of home automation with respect to an increase level of affordability and simplicity through the integration of home appliances with Wi-Fi server which serves as a basic application of IoT. ESP8266, capable of hosting or offloading all Wi-Fi networking. In this work we presented a model of Wi-Fi Based Remotely Operated Smart Home Automated System using the Concept of Internet of Things. As we saw the device got connected with cloud and was operated remotely through a mobile application. Here we tried to reduce the cost issue with proper connectivity and some good features like notification and some basic home control system requirement. This proposed model has a wide variety of applications such as in home automation System, Hospital Automated System and so on. It also has a number of advantages like faster and efficient system, reduces human effort, reduce delays as well as increase human efficiency. There are a lot of features that can be added to the presently designed system. As IoT is growing day by day we can see that such smart devices will also grow.

VII. FUTURE SCOPE

Future internet design for various IoT cases, such as smart cities, smart environments, smart homes, etc. The fields of interest include: IoT architecture such as things-centric, data-centric, service-oriented IoT architecture; IoT enabling technologies and systematic integration such as sensor technologies, big sensor data management, and future Internet design for IoT; IoT services,

applications, and test-beds such as IoT service middleware, IoT application programming interface (API), IoT application design, and IoT trials/experiments; IoT standardization activities and technology development in different standard development organizations (SDO) such as IEEE, IETF, ITU, 3GPP, ETSI, etc.

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