

A Review on IOT Based Smart Home

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Abstract:— A number of internet users is increasing day by day. Now days there are many ways to communicate but most of the communication is done through the internet. With increase in digital devices in home there is needed to access and control the appliances from remote locations. IOT is one of the fast rising internet technologies which provides communication between the things without human interface and allows the user to access devices from remote location.

Keywords:-- internet of things(IOT), raspberry pi3, home appliances, web page or android app, cloud networking

I. INTRODUCTION

The main aim of this paper is to design a smart home which controls and monitors the devices or appliances around house through internet. This system present the wireless home automation using development board raspberry pi3 with cloud networking .User controls and monitors the light, fan, water level and LPG gas within their home. A web or android application is used by user to give instructions to this system. In order to reduce the human efforts and to make domestic activities easier, convenient, comfortable, secure this system plays a vital role. Data and information sensed by sensor. This sensed data is transfer through server and control action is taken by the mobile application as it provides a much faster alternative than mobile web browsing. It has made human life more easier and comfortable. This project is very useful for people with physical disability. It plays important role in maintaining life standard and provide secure and flexible environment. This system provides great flexibility to connect it's sensor to server by using Wi-Fi technology which in inbuilt in raspberry pi3.

II. EXSISTING SYSTEM

There has been a significant growing in home automation system. There are many methods to implement a smart home.

Existing systems for smart home

R A Ramlee has implement A home automation system with low cost and wireless remote control[1]. Bluetooth module is used as communication media in this system wireless Bluetooth technology provides remote access from pc/laptop or smart phone

Satish Palaniappan Developed A GSM based smart home home system[2].GSM is used as communication

media and it is also used for controlling the appliances. This is an SMS based system. Controlling of all home appliances is done through the SMS codes.

W Xu has design and implement smart home system based on RFID Technology[3]. This paper describes a kind of smart home control system. embedded microprocessor is used as main control unit and is also uses RFID technology for household staff identity recognition. S Benjamin Arul in their paper has presented Wireless home automation system using zigbee[4]. Zigbee is wireless network. All the sensors and actuators are connected to this network. This system is intended for controlling all home equipment's through voice commands. It makes the use of RF Zigbee wireless communication module.

Md tanvir ahammed described that Home appliances are control through mobile phone[5]. The home appliances are operated remotely through mobile phones is proposed. It is DTMF based system consist of two mobile phones, DTMF decoder and ATmega8 microcontroller. Daehwan kim has used body gestures to control home environment[6]. It is an intelligent smart home control system using body gesture. In this proposed system a person must be present near to appliance which is to be controlled. By assigning a particular gesture system will on and off the device.

A S Vibhute The main objective of this paper is to design Home automation using PLC and SCADA[7]. All the home appliances are to be control automatically by PLC. SCADA is interfaced with the PLC to visualize the current status of home appliances.

A N Gowda presents a system which will control all subsystems in home using labview software as main controller unit[8]. Sensors are fetched through labview software which having the capacity to process on program and give logical output to entire house power system.

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III.SYSTEM IMPLEMENTATION

We are going to make a smart home system which will control all devices and equipment's in home through internet around the world. There are two main modules in Home monitor and control system: Web server and Hardware module. This system is effective and feasible as the Light, Fan, Gas Sensor, Water level Sensor are integrated to the proposed home control system.

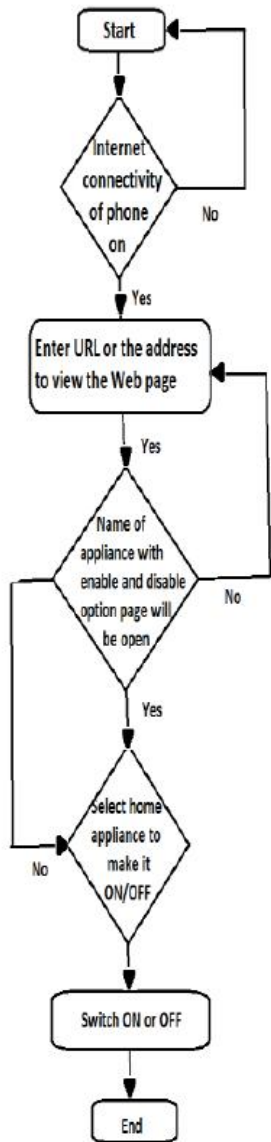


Fig 1. Flowchart of complete system

When there is Internet connectivity, enter URL or the Address of web Page. After entering the URL, the Page having name of Home Appliances with Enable and Disable option is open. By selecting the typical home appliance we make it ON/OFF then as per the command given the appliance will ON or OFF.

Software of Home Automation System is Sever Application software. It is the library of Web server running on Raspberry pi 3. The Raspberry pi 3 is used for the successfully communication between the remote user and Home Gateway.

IV.RESULT

After the successful connection to the server, the data of sensor are sent to the web server for monitoring of the system. The figure 2 shows the web server page which will allow us to monitor and control the system. By entering the assigned IP address in the web browser this web server page will appear. The web server gives the information about various electrical appliances like light, fan etc. which we can control remotely. From anywhere and anytime data can be examined, analyzed through cloud storage system. All this information is stored in the cloud which can be checked by the user any time when away from home.



Fig 2. Web Server Page

V. CONCLUSION

Based on existing systems study the different home automation systems are presented. Controlling unit, graphical user interface and communication interface are the main factors of all these system. In this review explained various home automation systems e.g. Bluetooth Based, GSM Based, RFID Based, ZIGBEE Based, DTMF Based, PLC and SCADA Based, LABVIEW Based. All these

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systems having some disadvantages in terms of security, range and accessibility. But our IOT Based smart home automation system overcomes all this disadvantages by providing high security and user friendly access around the world. There are number of development boards available in the market. We are using Raspberry pi 3 that allow creating home automation system quickly and easily with low cost and high performance. Thus IOT Based smart home is better in every aspect than the traditional existing systems.

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