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IOT BASE SMART HOME APPLIANCES BY USING CLOUD INTELLIGENT TETRIS SWITCH

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ABSTRACT:

To enhance the convenience of life, Internet of things today is a famous research topic. However, different home appliances provide different functions and services. Hence, in this research, the IOT base Smart Home Appliances by using Cloud Intelligent Tetris Switch is proposed which including the Cloud Intelligent Tetris Switch, Cloud Home as a Service (HaaS) Server, and IOT based Appliances. The Cloud Intelligent Tetris Switch is proposed to achieve the power control and local data exchanging. In addition, the dynamic extendable module is embedded. The IOT based Appliances provide the service of identification. Similar to the EPC network, the corresponding home appliance description data with RFID unique number can be obtained from the Internet and manufacture. The Cloud Home as a Service (HaaS) Server is proposed to provide the user interface for client users, storage all the information or data corresponding to the specific house, and query the function information of individual home appliance.

I. INTRODUCTION

A. Overview of Internet of Things

The internet of things (IoT) becoming a rapidly increasingly growth topic of conversation both in workplace and outside of it. It's a concept that not only has the potential to impact how we live but also how we work. This is the concept of basically connecting any device with an on and off switch to the Internet. This includes everything from cell phones, coffee makers, washing machines, headphones, lamps, wearable devices and sensors and actuators to

the internet where the devices are intelligently linked together to enable new forms of communication amongst people and themselves almost anything else you . The survey Gartner says that by 2020 there will be over 26 billion to 64 billion connected device. The IoT is a giant network of connected of "things", which is related with people-people, people-things, and things-things. Significant advancement of IoT over the last couple of years has created a



new dimension to the world of information and Communication technologies. The increasing technology is leading to anyone, anytime, anywhere connectivity of things with expectation which will extend and create an entirely advanced dynamic network of IoT. The IoT technology can be used for new innovation concepts that can be wide used for development space for smart homes system in order to provide intelligence, comfort, safety and improved quality of life.

B. Home automation Techniques

Smart home automation is very popular due to its numerous benefits in promising area, these techniques will controls all the electronic devices which will reduce the human involvement to get minimize. It will provide various benefits such as greater safety, comfort, and security, a more rational use of energy and other resources thus contributing to a significant savings. This research application domain is very important and it will implement in future as it offers very powerful means for supporting and helping special needs of the elderly and people with disabilities for monitoring and control of home appliances. There are a number of factors that needs to be considered when designing a smart home system [7]. The system is very friendly with the dramatic increase in smart phone users, smart

phones have gradually turned into all-purpose portable devices where the people can provide for their daily use. In this paper, a low cost wireless controlled smart home system for controlling and monitoring the home environment is presented. Embedded micro-web server with real IP connectivity is used for accessing and controlling of appliances and other devices remotely from an Android based app, which can be used from any Android supported device. The Raspberry pi is used for the micro webserver thus eliminating the use of PC and the system requires user authentication in order to access home automation system in smart home. Voice activation for switching applications may also incorporate to aid users especially for the elderly and the disabled persons.

II. LITERATURE REVIEW

Sirsath N. S, proposed a Home Automation system that employs the integration of multi-touch mobile devices, cloud networking, wireless communication, and power-line communication to provide the user with remote control of various lights and appliances within their home. This system uses a consolidation of a mobile phone application, handheld wireless remote, and PC based program to provide a means of user interface to the consumer [1].

Basil Hamed, described the design and implement a control and monitor system for smart house. Smart house system consists of many systems that controlled by LabVIEW software as the main controlling system in the paper. Also, the smart house system was supported by remote control system as a sub controlling system. The system also is connected to the internet to monitor and control the house equipment's from anywhere in the world using LabVIEW [2].

Deepali Javale, presents assist to handicapped/old aged people. It gives basic idea of how to control various home appliances and provide a security using Android phone/tab. The design consists of Android phone with home automation application, Arduino Mega ADK. User can interact with the android phone and send control signal to the Arduino ADK which in turn will control other embedded devices/sensors [3].

Mohammad El-Basioni, proposed a new design for the smart home using the wireless sensor network and the biometric technologies. The system employs the biometric in the authentication for home entrance which enhances home security as well as easiness of home entering process. The structure of the system is described and the incorporated communications are analyzed, also estimation

for the whole system cost is given which is something lacking in a lot of other smart home designs offers. WB-SH is designed to be capable of incorporating in a building automation system and it can be applied to offices, clinics, and other places. The paper ends with an imagination for the future of the smart home when employs the biometric technology in a larger and more comprehensive form. The paper ends with an imagination for the future of the smart home when employs the biometric technology in a larger and more comprehensive form [4].

III.EXISTING SYSTEM

Internet of things today is a famous research topic. To enhance the convenience of life, connecting most sensors and appliances can be a good solution. By using the central home server, people can use the Wi-Fi or Bluetooth connection to control the home appliances. Suppose that all the home appliances are connected to the network and already on demand identified by the central home server, all the states of the appliances can be monitored remotely. However, not all current home appliances can be connected to the network. Most of the appliances are turn on/off based on the mechanical switch. In addition, different

home appliances provide different functions and services. Hence, how to connect these different home appliances to the network for remote control becomes an important issue. Currently, the extension cord with manual switches (or sockets) is popular and generally used. In addition to the mechanical switch of individual home appliance, the manual mechanical switch can be used to enable the specific socket for home appliance using. In other words, there are two phases for appliance controlling:

- 1) The switch of extension power cord for power providing,
- 2) The switch for function activation of the appliance.

If the home appliance is controlled and monitored, it means that the appliance is powered on and already connected to the network. In opposition, to save the power and reduce the cost, the appliance should be turn off if it is not used. Since most of current appliances today are not equipped the intelligent power module, to directly turn on or power on the appliance via using wire or wireless signal is too difficult. In addition to the power, different appliances provide different services. In the other hand, the corresponding function commands will be

needed for each appliance. Considering the current appliances used, to query the service functions from these appliances is almost impossible. These appliances cannot reply the queries to the central home server automatically. In other words, for the home central server, to dynamically identify each home appliance for executing the specific function or service is not possible.

IV. PROPOSED SYSTEM

In this paper, the IOT base Smart Home Appliances by using Cloud Intelligent Tetris Switch is proposed which including the Cloud Intelligent Tetris Switch, Cloud Home as a Service (HaaS) Server, and IOT based Appliances. The Cloud Intelligent Tetris Switch is proposed to achieve the power control and local data exchanging. In addition, the dynamic extendable module is embedded. The IOT based Appliances provide the service of identification. Similar to the EPC network, the corresponding home appliance description data with RFID unique number can be obtained from the Internet and manufacture. The Cloud Home as a Service (HaaS) Server is proposed to provide the user interface for client users, storage all the information or data corresponding to the specific house, and query

the function information of individual home appliance.

V.CONCLUSION

Home networking and architecture design are very important for a smart home automation system. The interfacing of sensors and microcontroller with raspberry pi is successfully simulated and tested for all smart nodes along with feature of remote controlling using Android application. With successful design and testing of hardware, this project proves to be very useful in daily home management with increased smartness with usage of smart devices.

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