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Smart Home Automation System using IOT

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A B S T R A C T

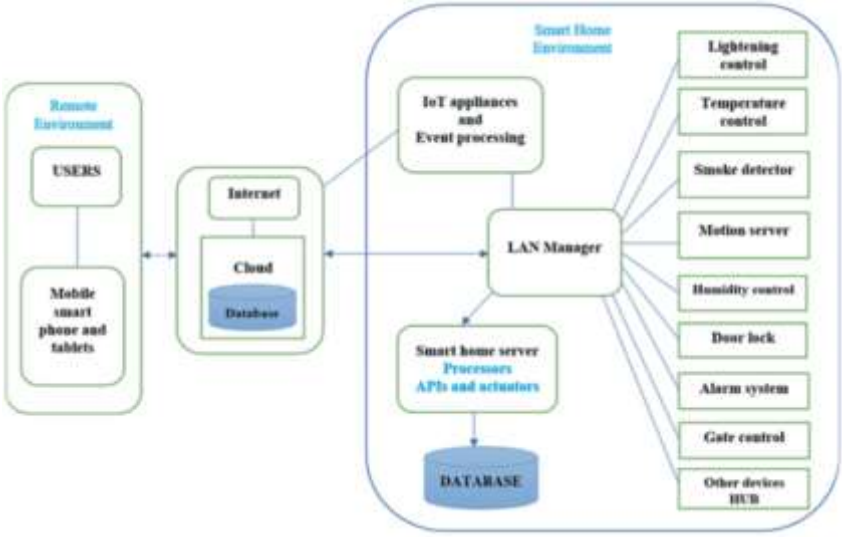
In recent decades, smart home systems have been very popular due to their ability to improve comfort and quality of life. Smartphones and microcontrollers are used to operate the majority of smart home devices. To monitor and control house functions utilising wireless communication methods, a smartphone application is employed. We investigate the idea of a "smart home," incorporating IoT services and cloud computing into it, by incorporating intelligence into sensors and actuators, networking smart things using relevant technology, enabling interactions with smart things through cloud computing for convenient access from various locations, boosting computing power and storage capacity, and enhancing the effectiveness of data exchange. We propose a combination of three elements in this chapter to create a solid framework for an advanced smart home concept and implementation

Keywords: Internet of things (IOT), automation, home, iot, smart, control, wireless, monitoring

Introduction

- People always try to find new methods to increase their comfort. This includes ideas for making daily tasks easier . Nowadays people can install smart appliances inside their homes in order to control some of the house tasks . This type of intelligent devices have the possibility of remote control, which eliminates the necessity of being near the device.
- Since it is rapidly evolving and is present in many products, there is a need for understanding its meaning and challenges. The term refers to connecting devices that are not directly controlled by humans to the Internet. By connecting such devices, an intelligent and invisible network is created, which can be accessed through the cloud.
- Depend on your topic mentioned above necessary details point wise.
- IoTivity tries to ensure that each new smart device can connect into the IoT ecosystem. Since it is an open source project, it encourages developers to contribute and extend the framework with the necessary information for connecting all types of devices in the proper profile like Consumer, Enterprise, Automotive and Health
- Therefore, with this API multiple technologies for transporting information can be incorporated. For example they can be based on Bluetooth, Wi-Fi or cloud communications. There are also protocols that allow smart devices to communicate with each other and over the Internet. Examples in this area include ZigBee and Z-Wave

Architecture/ Diagrammatical Design



IMPLEMENTATION A. ASP.net ASP.NET is a server-side web application framework used for designing dynamic web pages. It was developed by Microsoft. We can build dynamic web services, web pages and web applications by asp.net. We are using this to build web server which handle status of appliances. User will access devices by using web site. He will check and change status of devices. B. Software Design As discussed earlier, we are developing a website. The application consist functions like light, fan, humidity and temperature control. When website opens, user is authenticated Moved to main screen which displays home appliances. User has to select one to access it. Then he can check and change its status if he wishes. The proposed system is a distributed automation system which consists of server and sensors. Server controls and monitors the various sensors. It can be configured to handle more hardware and sensors. The Intel Galileo development board, with built in Wi-Fi card port to which the card is inserted, acts as web server. This system can be accessed from the web browser from any PC in the same LAN using server IP, or it can be accessed remotely through real IP or mobile handheld device connected to the internet with appropriate web browser through server internet IP. Wi-Fi technology connects server and the sensors. Wi-Fi is chosen to improve system security and to increase system mobility and scalability.

APPLICATION (a) Lighting Control: Leaving the Dark Ages and Stepping Into the Light (b) HVAC Regulation: No Longer Burned by Your Heating Bill (c) To help Handicapped people (d) Where less energy consumption is major factor

VI. ADVANTAGES (a) Adds Safety Through Appliance and Lighting Control (b) Secures Home Through web control Increases Convenience through Temperature Adjustment (c) Save time (d) Save money and increase convenience (e) Allow to appliances control when out of town

Technology

Zigbee is a wireless technology developed as an open global market connectivity standard to address the unique needs of low-cost, low-power wireless IoT data networks.

Alarm Service There is a separate service which implements the alarm mechanism. This Alarm Service is used for controlling the buzzer of this project. It has methods for instantiating the Buzzer object from the upm [22] library which sends information to the hardware device from the Grove Starter Kit. When the other sensor services decide they need to trigger an alarm, they call a StartAlarm() public method from this service which opens the buzzer. It can play either for a certain amount of time or indefinitely, depending on the arguments passed to the buzzer. Mesh network technologies which also provides to work with wireless internet connectivity. Making it easy to give operate smart devices.

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References

1) Irina-Ioana Pătru, Mihai Carabaș, Mihai Bărbulescu University POLITEHNICA of Bucharest Bucharest, Romania Emails: ioana.patru@cti.pub.ro, mihai.carabas@cs.pub.ro, mihai@roedu.net

2) J. Stragier, L. Hauttekeete, L. Marez, Introducing Smart Grids in Residential Contexts: Consumers' Perception of Smart Household Appliances, Belgium, pp. 1-2, 2010

3) P. Waher, Learning Internet of Things, Birmingham, pp. 1-3, 2015

4) J. Lertlakkhanakul, J.W.Choi and M. Y.Kim, Building Data Model and Simulation Platform for Spatial Interaction Management in Smart Home, Automation in Construction, Vol. 17, Issue 8, November 2008, pp. 948-957

[5] A. R. Al-3)Ali and M. AL-Rousan, Java-based Home Automation System, IEEE Transactions on Consumer Electronics, Vol. 50, No. 2, May 2004,