CONTROLLING OF HOME APPLIANCES USING IOT

Abstract. In this paper we focus on controlling of home appliances by using internet of things. The devices connected to the cloud server are controlled by admin by giving commands. The controlling can be done by using Arduino.This whole system using Internet of Things (IoT) will be used to control home appliances from anywhere in the world by using internet connection. An IoT based Home automation is also one of such examples. In IoT based home automation various things such as lighting, home appliances, computers etc., all are connected to the Internet and allowing user to monitor and control things regardless of time and location constraint. This paper uses ThingSpeak IoT Platform for controlling home appliances through internet. The proposed system presented in this paper is used for controlling of home appliances through Internet of Things(IoT).

Keywords. Internet of thing (IoT), Home automation, Cloud computing, Wi-Fi Module (ESP8266), Arduino.

1. INTORDUCTION. Automation means we can control things from anywhere by single click through internet. The meaning of automation changes with time based on technology.The main concept of Internet of things is that it can create a virtual connection between a hub or a network and electronic and electrical objects. It is also used to exchange the information between different devices by using sensors, software, actuators. To establish connection between devices we use wireless communication technologies such as Wi-Fi, Bluetooth etc., and cloud computing technologies, like IOT, smart home is possible and its main goal is to make devices more aware, interactive and efficient for a better and safer world

1.1. 3 LAYERED STRUCTUE. According to China Communication Standards Association IOT is three layered structure : The first layer is called sensing layer which is mainly used for collecting information; The second layer is network layer which is used for information transmission and processing and The third layer is application layer which is used for storage and decision making.

1.2. HOME AUTOMATION. In this model the appliances can be controlled by a single application programming which uses Internet Protocol (IP) addresses, and used to control appliances by using IoT web platform.New methods are developing in home automation mainly based on two concepts they are compatibility and usability.

1.3. ELEMENTS USED. IOT based information centre which will act as a platform for the architectural building block of the whole system. A Gesture-based control, using vision or wearable sensors, is another important branch of IOT based remote control. Connectivity is the backbone of IoT that is established by communication standards variety of wireless network protocols are being used in smart home applications. In the IOT networks, some of the devices are embed on quotidian objects and therefore they must have small size, restricted computational resources and energy constraints. internet of things, sensors are used to collect information and a hub or controller is used to control all the sensors.To control these appliances we are using Arduino and a Wi-Fi module for connecting it to internet. We have different IoT public platforms to use. we have used thingspeak.

2. SYSTEM ANALYISIS.

2.1. NETWORK ARCHITECTURE. The main component for any IoT rooted operation is server. In this paper cloud server is used for data storage and control. Here we need to create a virtual connection between the server and the IOT devices. Point-to-point web socket for many ways to make a internet connection is used for this PHP language is used a web application and is used for taking logical decision. Thingspeak platform it provides user id as well as one link to control the devices.devices should be connected to the main server only the admin can have the access to change the status of any devices connected to the main server. Thus operation should work only when the internet connection is available. If there is no internet access then the whole system operation does not work and it shows an error. Here internet plays the major role and it is the heart of the whole system.

3. SYSTEM DESIGN AND IMPLEMENTATION.

3.1. SOFTWARE DESIGN. PHP programming language is used.After creating the socket, with the help of the internet connection it is connected to the cloud server. Check whether the whole system is in online or not, make sure that the whole system should be in online. After it is connected to the internet it gives us the notification. As we are using public free platform i.e thingspeak in this we can control the appliances by using the link and that link clearly shows the status of the devices. If the user want to change the status of devices he/she need not to login to their accounts by using this link they can change their status of the devices. When we are changing the status of the devices it will refresh the data and it can change the status as we required.Here the refreshed data will be send to the control user interface. The refreshed data in the control user interface should be displayed on the control screen. In this platform after the creation of account there is no need to login expect for the creation of new channels. All appliances can be controlled by using that link. Here the user can send the command to the connected IoT devices. User can control all the electrical and electronic appliances in every part of the home. By clicking on that link we can change the status of each appliances. This will continues until the internet is connected to the IoT devices If the zero value is present then reset the API key. Then after change the status of the loads. So that devices may turn on or off according to the status. Internet is connected non zero values.

4. WORKING. When user start the application first a login page . It will shows whether the user was successfully login. After the user login or logout a home page will appear in which the user can control all their devices connected to the server. Our designed model of home automation can also controlled by using any API key. To operate home automation system user need to go web-page of home automation system then a login page will appeared . By login to the page the main home automation page will appear . In this page the user can control their appliances and they also change their security settings. It is possible only when the database is present in the server and the data will also received from the server. After creating an account in thingspeak they provide one link to the user. So that the user may easily control the appliances by using that link and the user can turn off or on the any appliances which are connected to the circuit.

5. CONCLUSION. This setup will provide complete efficiency in terms of security as it has a single user who can control all the connected devices by using internet. Internet of things is the emerging technology which includes some platforms. These platforms helped us to control our home appliances using internet. Here this platform will create a network between main server and the loads. By this we can control home appliances very easily and it makes our home smarter

to live in.

6. References. Click for research paper