Wi-Fi Embedded Universal Remote via Smartphone

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ABSTRACT: Today's world has been rapid and lucent spread of Smartphone's which gets and posts request that return responses to communicate between remote users and web server. Cloud counting acts as both front end to access internet of things (IOT) and storage of data. Using a mobile application user can controller IR compatible nearby devices using Infrared emitter (IR).The transmitted IR signal contain codes of task that user wants the device to perform. Hence, we are able to present a low cost and flexible solution of control home appliances using Smartphone from anywhere at any time saving power and energy.

KEYWORDS: Home automation system, Light Emitting diode,WiFi, Internate of thing

I. INTRODUCTION

Homes of the 21st century will become more and more self-controlled and automated technological developments have given huge contribution to improve the quality of human life and welfare by monitoring and controlling the electronic devices and electrical energy at home to facilitate the user. For e.g., simple devices such as a timer to turn on one' s tea maker in the morning have been around for many years, but much more sophisticated mechanisms will soon be prevalent in homes around the world. Imagine yourself walking into home and being greeted at the door with lights illuminating your path with your Smartphone's one touch. The Home Automation System (HAS) has three logical levels. The top-most layer is the input/sensor layer, which can be from sensors, clock modules, re-mote controls, or any other kind of input. The control unit comprises the next layer. This layer reads the inputs and performs actions depending on the values of the inputs and the control program specified by the user. Finally, the control unit outputs commands to the actuator layer. The actuator layer is responsible for forming and sending commands to the real-world systems such as lights, HVAC systems, security systems, and music systems door with one touch. Microcontroller is used as a support tool for controlling the electric current for eg., GSM module data transmission due to current is updated in every second which needs more storage. This can be reduced by using online space that connects to Smartphone known as cloud .The Smartphone is has a capability of phone and computer in same time with features of accessing mobile web, has an operating system (eg.,Android,ios,windows, etc).We can secure Smartphone using password system. Most systems exchange data and communicate with help of Bluetooth, Zigbee,GSM,WI-FIetc.Wireless systems like WLAN have become more and more common in home networking by connecting different rooms and having access over it.People can enjoy high technology and simplicity lifestyle over a wide coverage area. Also a person can remotely access the system from anywhere at any time around the globe just by switching ON/OFF the application device. Various sensors are attached with respect to the application devices used(for eg, IR sensor, gas sensor ,temperature sensor,etc) which are used as triggers for actions, that are setup in computer program.Sensor driver systems are used to drive system. This helps in monitoring and controlling devices, determining the amount of flow of electricity, hence determining cost and able to reduce the power consumption.

II. EXISTING SYSTEM

The system that is useful for home automation is process using Bluetooth GSM,and AT commands it doesn't provide the specified accuracy for home automation system application. The system presented which is GSM based home automation system which is in-home wired communication and does not support wireless nodes in its present form. The concept of electric current controlling using this technique is easy but needs more storage for sms for per second updation of electric current. Here the user can control ON/OFF the electrical Appliance via SMS using "AT" commands .The µC is connected to GSM Modem which I s first initialized using AT commands via RS 232 Protocol. After that the SMS that is sent by user is received By GSM Modem. The µC will receive the SMS and store the SMS in internal RAM and display the frame on LCD. Depending on frame the µC can turn ON/OFF home appliances it require more time for processing system application.

III. PROPOSED SYSTEM

In this approach, Provide an application which allows :

- Remote connection (via internet) to the smart home
- IP and user authentication
- Device control and monitoring
- Scheduling task and setting automatic control of the smart home environment
- Password change option
- Supports voice activation for switching function

Fig .1 Block Diagram

APPLICATIONS

- Home automation
- IP camera
- Mesh network
- Sensor network

- ▪ Wi-Fi location-aware device

IV. CONCLUSION

By integrating multi-touch mobile device which acts as a universal remote for all computing devices, wireless communication using Wi-Fi, cloud networking, we were able to design and build functional home automated system. This allows the user to monitor as well as control various home appliances either within their home or from anywhere around the globe remotely. Using this system as framework, system is expandable which may include home security features like open door, motion detection, gas detection and smoke/fire detection, energy management system. We can also extend this system using voice recognition system in case your Smartphone fails and also adding more artificial intelligence like password based protection.

REFERENCES

[1] Cloud based low-cost monitoring and automation system by Shruthi Raghavan and Girma S. Tewolde.
[2] Android phone enabled home automation, Journal of Academic and Industrial Research (JAIR).
[3] Home automation using Cloud network and Mobile devices from International Journal of Innovative Technology ISSN:2321-8665.
[4] Design and Implementation of an IOT Access Point for Smart home from applied sciences ISSN:2076-3417.
[5] Design and Implementation of a WI-FI based Home Automation System from International Journal of Computer, Electrical, Automation, Control and Information Engineering Vol:6, No:8,2012.