ANDROID AND BLUETOOTH BASED VOICE CONTROLLED WIRELESS SMART HOME SYSTEM

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KEYWORDS:
Home automation, Android app, Bluetooth device, Renasas microcontroller, LCD display, Motor driver, LED brightness control, CPU fan speed control.

INTRODUCTION:
The past decade has seen significant advancement in the field of consumer electronics. Various “intelligent” appliances such as cellular phone, air conditioners, home security devices, home theatres, etc., are set to realize the concept of a smart home. They have given rise to a Personal Area Network in home environment, where all these appliances can be interconnected and monitored using a single controller. Home automation involves introducing a degree of computerized or automatic control to certain electrical and electronic systems in a building. These include lighting, fan etc. Moreover the problem was that elderly and disabled people cannot do their work on own and to make a friendly user environment the home automation system was introduced. Since the elderly and disabled people cannot manage to do their own required work such as switching the fan light etc. This project is helpful for the smart home system.

1. Home appliances can’t be operated from distance.
2. Each time we have to point out remote control towards appliances to control them.
3. An IR waves doesn’t pass through doors and walls.
4. High intensity of Florescent light may interrupt communication
5. IR based system reduce the flexibility

This project demonstrates a simple home automation system which contains a remote mobile host controller and several client modules (home appliances). The client modules communicate with the host controller through a wireless device such as a Bluetooth enabled mobile phone, in this case, an android based Smart phone.

OBJECTIVES:
The objectives of the system are:

1. To control home appliances by using voice commands.
2. To help the disabled and elderly people.

This project is an embedded one so there is a hardware as well as software part. It is can also be used by non programming people easily and simple to use.
It can be used by two types of users:

1. Elderly people.
2. Disabled people.

Elderly and disabled people can use this system for controlling their home appliances just by having an android application in their smart phones and passing voice commands through android app and the hardware part has an Bluetooth device which recognizes the voice command and operates on it. New features such as GPS or the Internet can be used to receive the voice commands.

**METHODOLOGY:**

**BLOCK DIAGRAM:**

**DESCRIPTION:**

1. This paper details the overall design of a Wireless Home Automation System (WHAS). This is fuelled by the need to provide supporting systems for the elderly and the disabled, especially those who live alone.
2. The automation Centre’s on recognition of voice commands and uses Bluetooth wireless communication module. The home automation system is intended to control all lights and electrical appliances in a home or office using voice commands.
3. In this system Bluetooth device receives voice command as input to a Renesas controller, which converts the data into a required format to be used in the microcontroller where the devices are attached to it. Based on the message it received, it either turns ON/OFF the home appliances.
4. The users can manipulate appliances anytime, anywhere, letting our houses become more and more automated and intelligent. Therefore, it’s a good choice to design a terminal based on phone.

**RESULTS AND CONCLUSION:**

This system is very useful for the adults and physically disabled persons, who are not able to do various activities efficiently when they are at home and need one’s assistant to perform those tasks. We used speech recognition system to implement this work. The ECLIPSE software has been used to implement the voice recognition system. At the same time CUBESUITE software has been used to support human-computer interactions to realize multiple functions.

**SCOPE FOR FUTURE WORK:**

The design may consist of PC. User can interact with the PC and send control signal to the ADK which in turn will control other embedded devices/sensor.