Voice Controlled Home Automation System

Rahul Deokar[1], Rushikesh Biradar[2], Anuja Patil[3]

[1,2,3]Student, BE Electronics and telecommunication, JSPM's ICOER, Pune, Maharashtra,India.

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Abstract - *Voice Controlled Home Automation is a very beneficial project for aged and physically disabled peoples, who are not able to do various activities comfortably when they are at home and need someone to carry out those tasks. With our project the difficulty of wiring in position of wired automation is obviated. By using home Automation noticeable amount of power saving is possible and it is flexible and consistent with future technologies so it can be easily customized for distinctive requirements. In current generation there is necessity for automating everything like home appliances and other electronic devices .This system can also provides secure access to offices, malls and also to industries. In the recent years, Home Automation industry is growing hastily, this is nourished by the need to provide supporting systems that are made to ease our living. Automation systems is presumed to be implemented in existing home surrounding, without any alteration in the infrastructure The automation is based on recognition of voice commands and uses a microcontroller .This paper presents the overall design of 'Voice Controlled Home Automation.*

Key Words: ***AMR application, Bluetooth, Electrical appliances, Home automation, PCB board***

1. INTRODUCTION

Automation is a trending matter in the 21st century making it play an significant role in our regular lives. This is a spreading technology, which has changed the way people live. According to the data reported by the market research and market intelligence firm ABI about 4 million home automation systems were sold globally in 2013. Voice based home automation provides the facility of passing information and commands among different installed devices and systems. Voice based home automation technology also greatly improves the   usability and functionality of any home. The voice commands given by the user via AMR application is transferred to the microcontroller which detects the voice command and proceeds with the switching accordingly .The home automation system is intended to control all lights and other electrical appliances in a home or office using voice commands. A smart Home Automation system allows saving money and the environment and also it is shock proof. The main attraction of any automated system is reducing human labour, effort, time and errors due to human negligence. With the development of modern technology, automation has become a necessity for everyone, especially for those who are physically disabled & aged persons. It's very simple home automation model where we just give controlled voice commands for switching of electronic appliances. Voice commands should be given on the AMR application installed on the android phone and according to the commands our system behaves that we can learn in further topic of the paper

2. LITERATURE SURVEY

1) Muhammad Izhar Ramli [1] developed a module of electrical device control system using Web. They also set the server with auto restart if the server condition is currently down.

2) N. Sriskanthan [2] proposed the model for home automation using bluetooth via PC. But it was not compatible with mobile technology.

3) E.Yavuz [3] has planned a phone and PIC remote controlled gadget for controlling the gadgets. pin check algorithm has been presented where it was with cable network but not wireless communication.

4) Pradeep G [4] presented home automation system by using Bluetooth which saves parcel of power and time utilizing mechanism to save the preloaded list by not making it to setup association all when required

5) Sushant Kumar [5] designed home mechanization through voice recognition and UI control . Both functions are carried out using a cell phone. The interfaces cooperate with one another using efficient Bluetooth wireless communication.
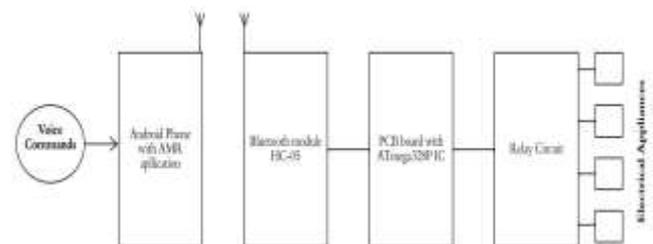
4. BLOCK DIAGRAM

Fig1. Block diagram of Voice controlled home automation

5. PROPOSED SYSTEM

In this project we are making voice controlled home automation using Atmega328p and we have developed our own PCB board which is having very similar look and function as that of ARDUINO Uno board We have taken PCB board and one IC base of 28 pins which is embedded on the

PCB board power supply is also designed on the same PCB board which takes input as 12V AC supply and produces 5V DC as output. Then we have connected Bluetooth module HC-05 and relay circuit to the ATmega328p IC also particular VCC and ground is also provided External AMR Application is connected with Bluetooth device. The AMR android application is connected with Bluetooth device the AMR android application converts voice commands into electrical signal and sends it to Bluetooth devices using radio waves once set-up is ready, commands are given through android AMR application this commands are such as

TURN ON FAN - TURN OFF FAN
TURN ON LIGHT -TURN OFF LIGHT
TURN ON WATER PUMP - TURN OFF WATERPUMP

These voice commands are then converted to electrical signal and are transmitted towards the Bluetooth device. According to these command data is sent to the relay circuit and accordingly switching action of the appliances connected to relay circuit takes place

6. FUTURE SCOPE

1. Voice base home automation system can be further modified for even controlling speed of the fan and intensity of light

2. Internet of Things can also be combined with voice controlled home automation system.

3. We can replace Bluetooth by GSM modem so that we can achieve device controlling by Sending SMS using GSM modem. We can also use wifi module instead of Bluetooth for home automation approach.

7. APPLICATION

1. The Voice Activated Home Automation system will help us control different loads (electrical appliances) with simple voice commands.

2. This Can be used using GSM and can be controlled over a long distance. also the project can be improvised by adding different sensors (light, smoke, etc.).

3. This kind of system is very useful for people with disabilities.

8. CONCLUSION

This project helps us to design low cost home automation using ATmega328p IC the system is easy to use has good reliability and real time features. These system

provide controlled voice command for home automation so we can conclude that these project shows that we can easily make home automation project using ATmea328p and not using ardruino board

9. REFERENCES

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