

Vowel Based Smart Access System

Sanghavi Ekta Thakkar Pooja Raut Madhuri Sanap Varsha

Abstract— Man in today’s era is surrounded by lots of machine that reduces his physical work. One such technology is “vowel based smart access system”. This technology is put to be used in several applications such as medical store, home automation etc. In these system actions are performed according to the user’s command in the form of voice. This voice is converted into text format with the help of SDK tool. This text is stored and checked in the database for matching the vowels. And thus the corresponding action is performed like opening of drawers in medical store and interfacing between h/w and s/w can be done with the help of LPT type connectors.

Keywords: Home automation system, Interfacing, LPT type connector ,SDK (Software development kit), Vowel based smart access system.

I. INTRODUCTION

With the emergence of various platforms, speech recognition technologies are developed to enhance the computing system with respect to speech. In this system, we provide the untrained Employees to access what is required in an easy manner; the only thing required is the speech of the person.

Initially this system was made in order to access only the internal system applications but now this “Vowel based Smart access system” is being developed so as to interact even with the external environment. This is a direct and an easy way to interact with the environment and access the function.

A. Need of the System

One firm most technology of speech application was the operating of internal OS features like Microsoft office, notepad and WordPad etc .User was able to directly interact with the internal features of the operating systems. The problem with this system was that only the internal features were operated and not the external commands. Then the Home automation system came [1].

The emergence of this “vowels based smart access system” came from the origin of the Home Automation System. In that system intelligent control of the electrical appliance and lighting was being done. Great investments are made to achieve more comfortable conditions. Optimum control of the system is very important to obtain the maximum benefits from these investments .The process of automation systems are usually carried out by evaluating data received from several sensors. Thus, several systems such as heating, lighting, gas, alarm, and security can be controlled easily and the control process can be monitored in a different environment [1].

Energy savings can be achieved in specific ratios with using the light sensors, motion detectors and the time clock on their own but maximum energy savings can be reached if they are used together with any conditional programmable lighting automation system. One such application was the operating of the coffee maker. It was in such a way that the user will command for the amount of milk, sugar and coffee he wants and the coffee cup is automatically filled. The drawback of this system was that this study had limited ability to control. However, it can easily be expanded with using multiple processors but it would have made the task complex. So there was a need of developing this system so as to cope up with all the features.

In the automation system developed, thief alarm control can also be run through the interface. Whole system is installed on the ground floor and consists of sensors and detectors placed at main entrances such as doors and windows.

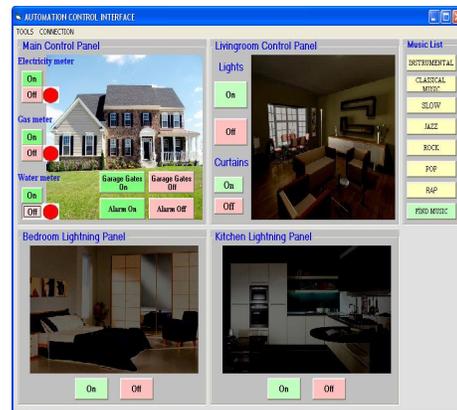


Fig a: Automation Control interface

B. Basic Concept of application

In this system, we provide the untrained Employees to access what is required in an easy manner; the only thing required is the speech of the person. With the

emergence of various platforms, speech recognition technologies are developed so as to enhance the computing system with respect to speech.

The speech control uses “command and control” approach [3]. This means that the user can control the s/w by speech input, but cannot offer continuous speech. The vocabulary was stored in the database for inspection [2].



Fig b: Working of System

II. EXACT INTERNAL PROCESSING

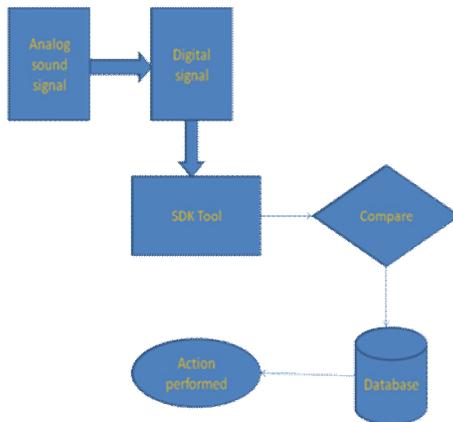


Fig 2.1: Block Diagram of System

In the exact internal processing, the person (owner/employee) will call the name of the medicine in the mike and these analog signals will be converted into digital ones by using the SDK tool. Using this spoken word is compared with the vowels in the database to check for the match. If there is a match then the action is performed else not performed.

III. PROPOSED SOLUTION

A. Other technologies available to cater the same concept

1. Design and implementation of a computer interacted smart home system based on PLC

In this, a smart home automation system has been developed to automatically achieve some activities performed frequently in daily life to obtain more comfortable and easier life environment. In the system developed, terminals and other components are controlled and observed via a computer interface using a programmable logic controller (PLC). Thus, some devices used in the system are easily accessed over the computer and status variations of them are successfully monitored on the interface.

Additionally, several operations are also controlled and monitored over the user central control unit such as main entrance control, switch on or off the electricity connection, open or close the water and gas valves, turn on or off the thief control system, garage door control, lighting and heat control of the each room. Thus, a comfortable and interactive automation system has been developed. Test results of the system have shown that it can be easily used for the smart home automation applications.

Different types of sensors can be used in automation systems to collect physical information such as temperature, humidity, motion and light. Motion detectors, magnetic or optical sensors placed on doors and windows, window Breakage detectors, keep under surveillance the whole house and provide an active deterrent effect in the home [1].

2. Design and implementation of a computer application that handled the internal applications:

One firm most technology of speech application was the operating of internal OS features like Microsoft office, notepad and WordPad etc .User was able to directly interact with the internal features of the operating systems. The problem with this system was that only the internal features were operated and not the external commands.

3. Design of a coffee maker:

One such application was the operating of the coffee maker. It was in such a way that the user will command for the amount of milk, sugar and coffee he wants and the coffee cup is automatically filled.

B. Proposing the theme to overcome the already studied idea / technologies or altogether proposing new idea

Initially this system was proposed in order to access only the internal environment. In advanced system we will be able to access even the external environment. In vowel Based Smart Access system, we create a small voice decoder system that is capable of recognizing vowels in human speech. The audio input is sampled through a microphone and analyzed in real time.

We were able to control all of our appliances from one place, have window blinds that automatically opened and closed based on the outside light, coffee pots that would automatically dispense the right amount of coffee and be brewed just when we needed a hit.

In this system actions are performed according to the user's command in the form of voice. Whatever the user says, corresponding actions are performed so that even an untrained person can easily perform his job. In this system, we provide the untrained Employees to access what is required in an easy manner; the only thing required is the speech of the person.

Name: Varsha Sanap
Email_id:varshasn3@gmail.com
Contact number: 8600126335
Qualification:B.E I.T(Pursuing)

Name: Pooja Thakkar
Email_id:poojat31@gmail.com
Contact number:8975102202
Qualification:B.E I.T(Pursuing)

IV. CONCLUSION

Vowels Based Smart Access System is easy to use and efficient enough. It reduces the time and effort of searching anything. Any new person can access this system who is not accustomed to the application.

REFERENCES

- [1] Erdal Irmak, Ersan Kabalcı, Ali Köse "Design and implementation of computer interacted smart home system based on PLC", Gazi University, Faculty of Technology, Department of Electrical Education, Ankara, Turkey.
- [2] Wong, E., "A Phone-Based Remote Control for Home and Office Automation", IEEE Transaction on Consumer Electronics, Volume 40, No. 1, 28-34, 1994.
- [3] Michel Vacher, Anthony Fleury, François Portet, Jean-François Serignat and Norbert Noury, "Complete Sound and Speech Recognition System for Health Smart Homes: Application to the Recognition of Activities of Daily Living",

AUTHOR'S PROFILE

Name: Ekta Sanghavi
Email_id:sanghavi.ekta6@gmail.com
Contact number :9765318222
Qualification:B.E I.T(Pursuing)

Name: Madhuri Raut
Email_id:raut.madhuri29@gmail.com
Contact number: 9405211700
Qualification: B.E I.T(Pursuing)