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## SPEECH INTERACTIVE WEB APPLICATION SERVICES

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# SPEECH INTERACTIVE WEB APPLICATION SERVICES

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**Abstract-** As we know internet has become a very important factor in our day today life. It is a wide media for communication and exchange of ideas for people staying in any nook and corner of the world. We have proposed a system in which we are developing a speech interactive web application services. Our main aim is to provide these services to the special ones who are unable to make use of the current system so efficiently. In our proposed work we are mainly focusing on the WEB APPLICATIONS. Many a times the disabled people are unable to access internet, for them this system will help to download news, or even access their mails through speech. Our proposed system mainly deals with the ability to handle web applications along with the O.S, mouse and keyboard control through speech, so that they can be used by persons without the use of the hands to develop an interface between the computer and the user. In our proposal we have used SAPI .It provides commands to the main central application which is handled by the GUI. Thus we look forward to develop web application through speech interaction.

**Keywords-** SAPI, Speech Recognition, Web Applications, Text to Speech, Speech to Text.

## I. INTRODUCTION

In the recent years the technology has been drastically changing. As we know internet has become a very important factor in our day today life. It is a wide media for communication and exchange of ideas for people staying in any nook and corner of the world.

Many new developments in the technologies have been seen. So now it has become challenging to prepare a system that is unique and would provide the best services ever. It would be very boring in a situation when you are tired and you want to access your computer, and check mails. Imagine just by saying download mail your system will download mail and also read it for you.

You need not to even enter your id and password and it will do it for you just by verification of voice. And some times handicapped people are also wanted to handle mouse and keyboard and the email or any internet related work independently. This is the main objective of our proposed work. We are providing a speech interactive system which will work according to the user, but just by SPEECH.

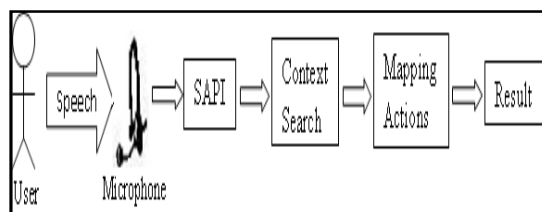
As many speech enabled system are available in the market with Operating System, Keyboard, Mouse control but our proposed system will go way beyond this and will aim to provide web applications. Taking in consideration the growing demand for speech enabled system this proposed work will help tremendously access web. The user will say a command through the microphone, this command will be converted into text with the help of Microsoft's SAPI, the command will be mapped with database information and the appropriate actions will be taken. It further does convert this available text to -

speech which may be heard by the user.

## II. RELATED CONCEPTS

SAPI: For speech synthesis and recognition Microsoft SAPI (Speech Application Programming Interface) can be used. First SAPI was introduced to Windows 95. There are number of versions of the SAPI have been released. And these all versions of the SAPI have been designed such that any software developer can create an application to perform speech recognition and synthesis with the help of a standard set of interfaces, accessible from a various programming languages. Thus we can say that SAPI is freely-redistributable component which can be shipped with any Windows application that wishes to use speech technology.

In our proposed work User gives the speech or voice with the help of microphone. Microphone processes that voice to the Speech Recognition system which will convert a voice signal to a sequence of words in form of digital data which can also be called as a command. This can be done with the help of SAPI.



### Nano XML Parser:

XML is The extensible mark-up language, which provides a way to mark up text in a structured document. The NanoXML was first released in April 2000 as a spin -off project of the abstract user interface toolkit. It is very small and reasonably fast

for xml documents and also it provides the facility of easy to use. Because of its small size, people started to use NanoXML for embedded systems (KVM, J2ME)

### III. PROPOSED ARCHITECTURE

In our proposed architecture we basically give the speech input through the microphone to the computer. As mentioned above the SAPI interface will mainly use for conversion of this speech to text. After this by using programming interface we will recognize the meaning of speech. After recognizing the type of input it will match with the words available in the database and for matching the available input with the requested input it will undergo parsing and give the best optimal output. After that the result is sent to SAPI which will convert this text to again speech so that the user would be able to hear it. Our architecture will mainly provide the most important feature which is web services. These web services will mainly include search engine, news download, mail access and all related to web application.

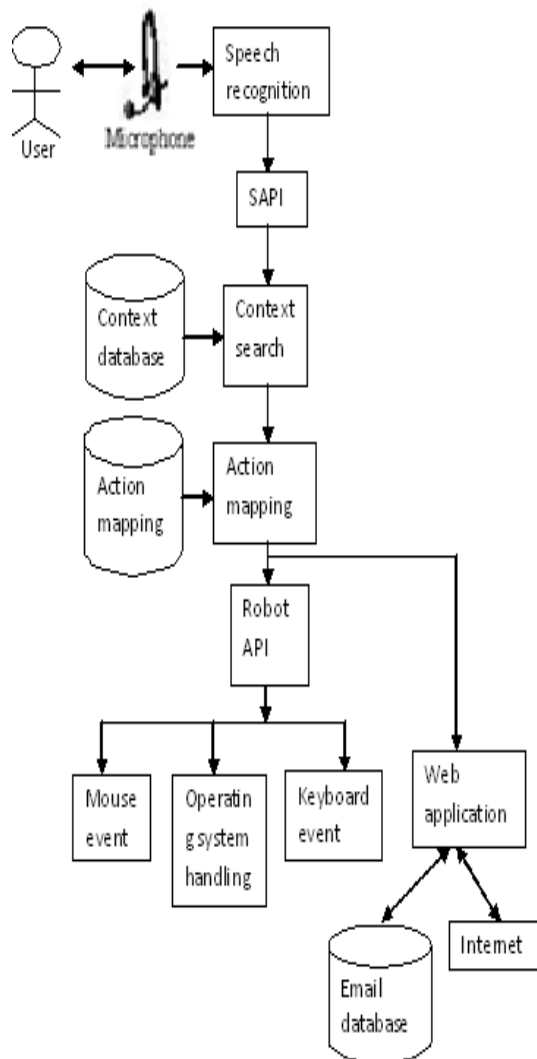


Fig: Architecture

For e.g. instead of selecting by a keyboard or mouse to open start option we can just say to the computer "Start" and the computer would respond by displaying start menu. By developing a fully accurate and fast speech recognition system we can possibly eliminate the use of keyboard and mouse in most of the applications. Likewise disabled persons may find hands-free computing important in their everyday lives.

For accuracy purpose we are using context based search for keywords that user enters so that appropriate action can be taken when appropriate keywords are encountered. User must be able to set/change the system preferences and context search parameters to his/her needs. Even multilingual commands must be accepted and recognized. For this the system must allow the user to map standard actions/commands to new keywords (keywords from different languages). System must also allow the user to create new actions and map respective voice commands to them. Using advanced Robot API, the system must generate mouse, keyboard events so that almost any application (entire OS) can be controlled using this system.

### IV. TECHNOLOGIES AND FEATURES

1. Java: We shall be using J2SE as the development platform for the prototype system.
2. SAPI: Microsoft Speech API shall be used primarily for TTS and STT conversions.
3. Process Builder & Robot API's from Java would primarily be used for Keyboard, Mouse and OS Process Control.
4. Lastly we shall make use of XML Parsers for accessing web contents like RSS Feeds in real time.
5. We shall use the parser to extract the feed information in real time and converting it into speech again using the SAPI modules.

### V. CONCLUSION

Our proposal gives the user friendly interface. This software is applicable for any version of Windows operating system. Every people are very much familiar with a windows operating system. That's why we mainly focus on windows operating system. Our software may satisfy basic need to access operating system through their voice command which will give qualitative product for avoid time wastage and make computing so easier. It is also helpful for physically handicapped persons for meeting their basic requirements of computing. Our intention is to help the disabled people to get the benefits of internet technologies and email facilities. The primary aim of this project is to provide a simpler design having least

cost and alsoreliable and practical. The system which we are propose in this paperallows the physical handicapped person to operate a computer in a more efficient and natural way.

## VI. ACKNOWLEDGEMENT

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## REFERENCES

- [1] Anil J Kadam, PallaviDeshmukh., “Speech Oriented Computer System Handling” International Conference on Intelligent Computational Systems (ICICS'2012)
- [2] Hao Shi and Alexander Maier, “Speech-enabled windows application using Microsoft SAPI” IJCSNS International Journal of Computer Science and Network Security, VOL.6 No.9A
- [3] Md. Abdul Kader, BiswajitSingha, and Md. Nazrul Islam.,” Speech Enabled Operating System Control” IEEE 2008
- [4] Vimala.C ,Dr.V.Radha., “A Review on Speech Recognition Challenges and Approaches”
- [5] World of Computer Science and Information Technology Journal (WCSIT),Vol. 2, No. 1, 1-7, 2012
- [6] RitwikaGhose, TirthankarDasgupta, AnupamBasu,“Architecture of a Web Browser for Visually Handicapped People”,2010 IEEE Students' Technology Symposium.
- [7] <http://www.microsoft.com/speech/download/sdk>

