# Voice Interactive Browser

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*Abstract—* **Now a day's web surfing has become an integral part of human society. Also web is utilized as a means of providing information to the world as well as accesses the same from any part of the world which is helpful for low fortunate people like motor handicapped. There also been many supports for second class citizen as our society farther expands. Guarantee of mobility is one of the urgency that requires support from many. Many efforts have been taken towards the need. But it's not easy to fulfill the overall requirements. This paper explains how we have designed built and implemented voice based browser, aweb browser that can be controlled by voice in an English language. Our prototype shows high accuracy rate of over 80% when the user speaks the command to navigate the web. This application is installed and tested its performance through android operating system smart phones version 4.2.2 which results in voice based interaction of the browser.**

*IndexTerms—* **Internet, Browser, Voice, Speech Analyzer, Speech Synthesizer , Android.**

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## I. INTRODUCTION

The growths in the web application to access a web through voice input commands will allow one day to anyone use the web without training. Further enhancement in this field results in easy access of internet for blind peoples as well as use of mouse and keyboards to input commands results in the fact limiting the use of web by blind or motor handicap user [1]. A mass of digital content that allow access to people via web browsers relay on World Wide Web. Text-To-Speech(TTS) and Speech-To-Text(STT) which are integral part of Automatic Speech Recognition (ASR) have been incorporated in web browsers which aims in accessing web contents aurally.Web is an ideal source of information service for many people. One of the computer program called web page reader reads text on web page this includes text to speech to generate speech sounds to corresponding text[2]. Usually World Wide Web pages will be designs for traditional computers hence they are difficult to watch with small display area. Therefore audio capabilities can be included along with visual display [4].

Voice browser is not a new technology but there are number of research to overcome the insufficient information regarding the menu structure[3]. Voice browser broadens development of internet which provide new advanced technology and make ease to surf [6]. Android is useful for constructing a server problem though it was initially designed for portable smartphones [5]. Android smartphones enables better computing and connectivity compared to other portable device's operating system. This is because android is designed hardware that helps in communication between hardware and software in which user interacts [8].

## II. RELATED WORKS

Android is a  popular software and a mobile computing  system which supports user interface, SMS, standard web application, E-mail clients, MMS, Portable devices. The Java language as a run time library which runs the complied byte code is used to develop applications by the developers of android. In addition to this, Android Software Development Kit (SDK) which provides required application to develop an Application Programming Interface(API) and variety of tools. Linux kernel supports to Android work which includes C or C++ libraries to support the system. All the source code of android is distributed as Apache V2 Licenses by the Google so that android programs can be developed independently[7] .There has been tremendous increase in the growth of smartphone users. Android can be proposed as server platform that enables many people to access resource on cloud servers [5].Android smartphones enables better computing and connectivity compared to other portable device's operating system.Even though android application is written in java programming language it has its own virtual machine that is DVM (Dalvik Virtual Machine) which is used in executing Android application[8].A mass of digital content that allow access to people via web browsers relay on World Wide Web. Text-To-Speech(TTS) and Speech-To-Text(STT) which are integral part of Automatic Speech Recognition (ASR) have been incorporated in web browsers which aims in accessing web contents aurally. Though digital content in various formats such as sounds, available on sites but they are very limited. Hence such contents are not intended to solely provide or represent the web page content on overall. One of the difficulties for surfing is those who are visually impaired will not be able to see the position of pointers and cursors, navigation via hyperlinks, text box etc. seems difficult without help of appropriate technology[2].

## III. RESULTS

The final outcome of our project is in the form of android application which works as a voice interactive browser for a user. This browser accepts input in voice format and finds input related information in world wide web and gives the output in both voice

and visual format. When a user opens the application there is a button which takes him/her to the default website which is assigned based on interest of user. There is a button name 'MIC' which provides the mic interface. This mic interface accepts the user input which will be in voice format, the voice will be converted into text so to search for links related to input given, meanwhile the recognized input voice will be displayed in the text format as well as toast.

The searched links will be extracted and displayed in an enumerated format, along with this the search result will be displayed in a web view. The displayed links will be read as well, here users can use (next) command to read farther link. So the user can open the required link by using command 'Open'. And also among the displayed links the user needs to select the link required by speaking the number which refer to the respective link. Selected links will be opened and contents of the links will be read and displayed as well. Meanwhile the links which are present in that particular website will also displayed in enumerated format. Same procedure will be continued for these links as it is mentioned above. User can revert to the main page by using 'Back' command. Then to close the application the user need to give exit option.

The commands to be used to navigate Voice Interactive Browser:

- Open: It opens the particular page.
- Next: Navigates to the next hyperlinks.
- Back: Returns back to the previous page.
- Numbers: Which helps in opens the particular numbered link.

The following represents the screenshot of app.

Fig. 1represents the first page or home page of the voice interactive browser app, when a user opens the app this is the page which a user encounters. It includes a buttons which has already explained above, such as start, mic and help. Fig. 2 represents the page which proceeds as the voice input command given by users which helps with a web view.

Fig. 1                                        Fig.2
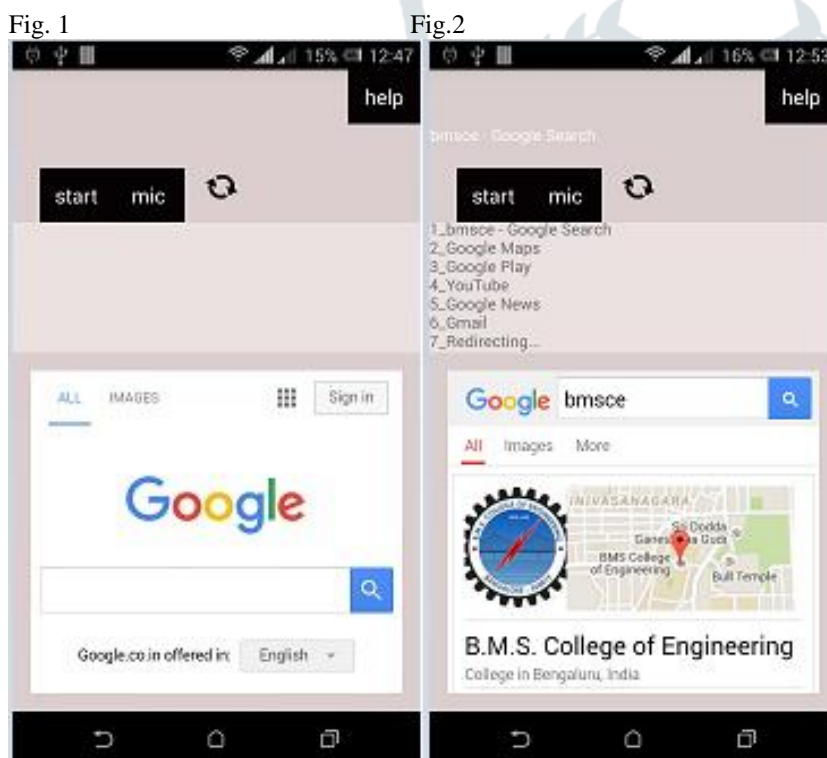


IV. CONCLUSION AND FUTURE ENHANCEMENT

Finally, to facilitate voice interaction in a browser, a prototype is built in the form of android application. This application broadens the development of internet and makes ease to surf. User have to provide input in the form of voice, this will be converted into text and searches for the content in the web. The related results will be in visual format as well as in audio format. This application is also able to navigate among webpages. As the technology upgrades day by day, many advanced features can be added and enhance the functionality of this prototype to make it fully fledged application. Our prototype shows high accuracy rate of over 80% when the user speaks the command to navigate the web. This application is installed and tested its performance through android operating system smart phones version 4.2.2 which results in voice based interaction of the browser. This prototype can be enhanced in future by adding interrupting commands for voice output also bookmark feature can be implemented, complete hand free and voice interaction can be implemented.

## REFERENCES

[1] ProadpranPunyabukkana, JirasakChirathivat, Chanin Chanma, JuthasitMaekwongtrakarn, AtiwongSuchato, The Implementation of CUVoicebrowser, a voice web navigation tool for the disable Thais, Chulalongkorn University, Thailand.

[2] AtiwongSuchato, JirasakChirathivat, Proadpran Punyabukkana, Enhancing a voice-enabled web browser for visually impaired, Chulalongkorn University, Phyathai Rd., Pathumwan, 10330 Bangkok, Thailand.

[3] Sungjae Han, Geunseong Jung, Minsoo Ryu, Byung-Uk Choi and Jaehyuk Cha, A voice-controlled web browser to navigate hierarchical hidden menus of web pages in a smart-tv environment, Hanyang University Seoul, South Korea.

[4] Aki Teppo, Petri Vuorimaa, "Speech interface implementation for XML browser", Proceedings of the 2001, international conference on auditory display, Espoo, Finland, July 29-August1,2001.

[5] Mis. Bhagyashri D Patil, Prof. P.L. Ramteke, "Development of android based could server for efficient implementation of platform as service", International journal advanced research in computer science and software engineering, volume 4, issue 1, January 2014, ISSN:2277128x

[6] Liao Rikun, JI Yuefeng, Li Hui, "Web voice browser based on an ISLPC text-to-speech algorithm", Wuhan University Journal Of Natural Sciences, vol.11 No.5 2006 1157-1160.

[7] Jae Sung Cha, Dong K Yun Lim and Y Ong-Nyuo Shin, "Design and implementation of a voice based navigation for visually impaired persons", International journal of bio-sciences and bio-technology, vol. 5, No. 3, June,2013.

[8] Kirandeep, Anu Garg, "Implementing security on android application", The internaltional journal of engineering and sciences(IJES),volume 2, issue 3, pages56-59,2013 ISSN:2319-1813 ISBN:2319-1085.