Toward a New Algorithm on Cloud SaaS Services for Hands Free Browsing

S.Karthikeyan
Assistant Professor
Department of Computer Applications
Dr. MGR Educational and Research Institute, University
Chennai – 95, TamilNadu

ABSTRACT

The role of the cloud within the lifetime of everyone seems to be changing into a lot of and a lot of vitality. People who usually use the cloud SaaS Service area unit traditional folks to use of all physical elements of their body. Unfortunately, members of society WHO area unit physically disabled don\'t get access to the present medium as they don't have the flexibility to access the Cloud SaaS services or use it. The Integrated Browser could be a laptop application that browses the net and displays information on the screen. It targets disabled users WHO have difficulties employing a custom keyboard and/or a customary mouse. Additionally, this browser, in contrast to the traditional methodology, works by responding to voice commands. It is characterized as a cost-effective and humanitarian approach as a result of it\'s handicap-friendly and is particularly useful to those that cannot use their hands. The Integrated Browser could be a stateof- art technology that has higher and quicker net expertise. it\'s a program which will facilitate and enhance learning of slow or/and disabled learners

Keywords

Internet Browsing, Handicapped, Computer Application, Voice.

1. INTRODUCTION

Cloud SaasS could be an international system of interconnected laptop networks that use the quality web Protocol Suite (TCP/IP) to serve billions of users worldwide [1]. A web browser could be a software package application for retrieving, presenting, and traversing info resources on the planet Wide cloud computing [2]. The individual could be a one who encompasses a special condition that markedly restricts his ability to perform physically, mentally or socially [3]. The IB (Integrated Browser) application tries to combine these 3 terms (Internet, internet browsing and incapacitated) to figure all at once and become a reality. There are many completely different internet browsers on the market within the cloud world. The many forms of browsers may well be employed by traditional those who will use their hands. Cloud usage has become a part of the everyday life during a society that contains differing types of individuals like kids, adults, and handicapped, every with their completely different talents. Sadly, the incapacitated faces difficulties in victimization the various general browsers. There's a desire to form a special browser to target these folks. This paper aims to develop an online browser with a brand new approach within the technology world. The amendment within the routine type of browsers could be a state-of-art style that provides a multifunction method through combining voice.

This paper has puzzled out to mix the voice with the web browsing, which might facilitate the handicapped to use the web in a straightforward and direct approach. Forward that the computer's operating system is running on which the program is within the startup programs, the main target would be on browsing the computer network through voice commands. A new specialize in accessibility ought to be unbroken in mind as speech technology has "always" (at least since the mid-1990s) implicitly addressed users with visual or mobile disabilities, sometimes Internet may be a world system of interconnected PC networks that use the quality net Protocol Suite (TCP/IP) to serve billions of users worldwide [1].A web browser may be a code application for retrieving, presenting, and traversing data resources on the globe Wide internet [2]. "Disguised" as a additional general goal of enabling eyes-free/eyes-busy or hands free/hands-busy access to internet browsing and alternative applications [4]. What makes the IB a distinct browser is its backbone algorithmic rule that supports the voice commands. The paper can discuss associate degree algorithmic rule which is able to develop a voice command browser that targets unfit folks. Additionally, the IB will be utilized by a person, not solely the handicapped.

The IB has its own new type of browsing that's shown within the new style of the browser. It has many inbuilt functions, like News Line, Add Rotator, Games, fast Search Button, Quick Email, and alternative helpful practicality. Bringing up the concept of getting a voice command browser is a technique of helping and supporting the unfit. There area unit alternative approaches of developing a voice command browser, but the idea mentioned during this paper is to develop the IB by applying a brand new algorithmic rule technique.

1.2. Technical Objectives

1. To allow the handicapped to interact and navigate the web using their voice.

2. To investigate the possibility of using the voice Recognition Technology, which is a special technique, needed to achieve success and use special components such as the programming language and specific grammar to match the key words.

3. To help workers multitask. If a worker needs to type, explore or navigate the internet all at one time, the voice would help achieve this simultaneously.

4. To investigate the difference between other browsers we used different functions and applications imbedded to show the IB different style such as:

- The voice recognition for facilitating the work on browsing the internet.

- The ability to change the background color through a choice of different colors to allow for personal style.
- The particular style of other browsers was avoided through using the different menus on different locations and adding the advertisement rotator.
- A rotating line for news was added.
- The user has many other facilities in this browser such as making pop ups optional, selecting size and other additional features.

2. LITERATURE REVIEW

In several studies, algorithms and applications are enforced to facilitate the net browsing or to revolutionize the standard approach of water sport the web in several angles. One application was enforced to show enumerated links within the browser window and to possess conjointly a compass mouse with a curser positioned over a mouse-over pull-down menu by speech recognition [8]. On the opposite hand there was an associate implementation of a multi-model browsing system that enables adding automatic speech recognition functions to plain net browsers. it absolutely was designed for a true Cloud SaaS Application designed for a medical domain [9].

Another implementation of a speech recognition system supported an online shopper-server model as a Java application program that records voice at the client PC sends the recorded speech file over the net, and also the server at the top purpose acknowledges the speech and displays the recognized text [10]. Additionally there was a contribution for Navigation of Speech system within which permits the user to regulate by speech a set of guidance facilities just like the basic toolbar commands, URL writing system, following hyperlinks and page printing [11]. This paper can track the voice browsing in an exceedingly new rule approach through the "vMatrix"Algorithm.

3. METHODOLOGY

A combination of the case study and also the personal interview was deemed applicable for this analysis. The case study is Associate in Nursing in-depth examination of a behavior, concept, or development. Complementary aspects of the case study square measure experiments and surveys. This analysis approach may be useful in analyzing a true state of affairs, and may function a robust basis for discussion. Interviews with system analysts were conducted to clarify their concepts concerning browsers, perceive the most performance Associate in Nursingd applications of browsers and to achieve an insight into the most issues they will have two-faced through operating with such applications. additionally, interviews with incapacitated individuals were conjointly conducted to grasp their demands for such a browser and also the degree they prefer to navigate the net. a gaggle discussion with some pc teachers occurred so as to get the algorithmic program potency to be enforced. From all the previous interviews conducted, a transparent plan was forming concerning browsers' applications, their performance, and also the user needs required for that application. The IB programme was designed employing a visual programing language (Visual Basic vi.0).

A flash programming application (Swish scoop program) was utilized in addition to the images so as to form a gorgeous vogue. The sound was increased within the browser which might facilitate several functions and improve the potency of the browser. The IB explores and navigates the net in an exceedingly user friendly manner which will synchronize the feature requests.

Questioners were distributed to a range of people within the analysis space for the aim of gathering the names of the foremost widespread and gratifying websites navigated. Then we have a tendency to supplementary what was instructed to the enforced browser as a step in developing the algorithmic program. There square measure 2 choices to begin the IB software package. the primary choice is to feature it to the active task bar, whereas the second choice is to put in atiny low tool that converts the OS functions to voice. during this paper, Associate in Nursing algorithmic program resolution on the way to open and navigate websites solely was provided. this implies that the system can care for a 1 voice command and browse the net. this may be refrained from the interaction at intervals the web site that can also be enforced mistreatment identical algorithmic program technique.

4. IMPLEMENTATION

This section discusses the activities required to with success build Associate in Nursing data system that consists of programming and secret writing. Programming is commonly seen because the focus of system development as system development is largely written programs. It's the explanation why all the analysis and styles area unit done. Throughout coming up with the computer program, totally different objects and things were inserted. Behind every of those objects and things, codes were additional to activate and create them work properly.

Interface style is that the method of process however the system can move with the external entities (system users or alternative systems). It describes the layout of the pages and also the flow of events. It's conjointly involved with wherever and the way knowledge area unit delineated on the pages [12]. However, in an exceedingly computer program style, needs, experience, and capabilities of the system users should be taken into consideration. Additionally, the designers ought to bear in mind of the users' physical and mental limitations (e.g. Restricted memory and people's tendency to form mistakes) [13].

The following illustrates some of the system's graphical interfaces.

- **News Line:** This Line displays the latest news from all around the world. It is just an RSS linker that is linked to a news agency.
- **Address Bar:** This allows the user to type the site he/she would like to navigate.
- **Add Rotator:** This is called the Advertisement Rotator, which is used to display the different online advertisements.
- **Search Button:** This button will take the user to a search engine page which will help him/her to search for any information.
- **E–Mail:** This button will take the user to an E–Mail Editor Form that enables the user to write an E–Mail and send it.
- **Add to Favorite Button:** This button helps the user to store any sites to quickly reference them without the need to retype their URL in the Address Bar again.
- **Games:** This is a button which allows the user to choose from different types of games to play.
- **Micro – Browser:** This is a button when clicked, will allow a Micro (smaller) size of the IB to appear in front of the old one but in a smaller size.

- **Calculator Button:** This button will display a Mathematical Calculator.
- **Speak Help:** This is a hint that facilitates the usage of the voice browser.
- **Site Display Area:** This is the area on which the navigated site will be displayed for user.

IB begins with a main page which has Buttons and Components as shown in Figure 1 below:

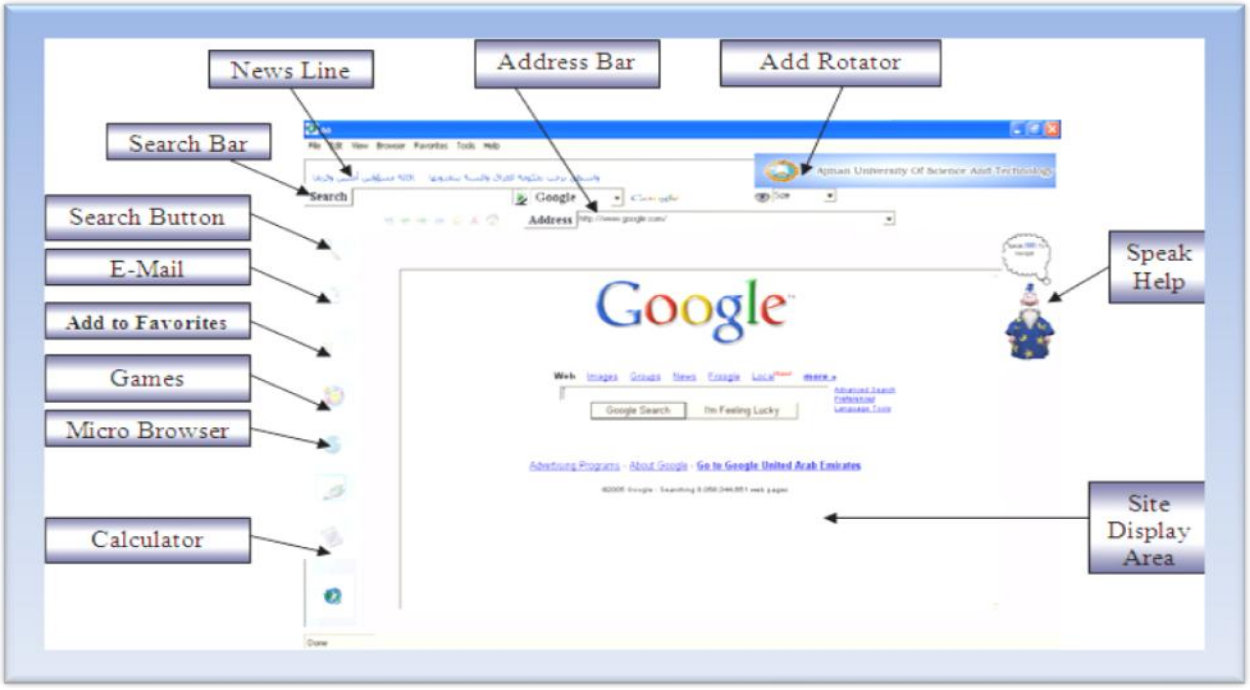

FIGURE 1: User Interface Design Shows Interaction between the System and the User.

5. ALGORITHM BEHIND

An rule named "vMatrix Algorithm", that stands for the voice matrix plan, was enforced. A descriptive linguistics was enforced as our info engine. A survey was conducted for the foremost favorite websites, employing a random sample of scholars, faculty, and employees at a university. Then, a type of one matrix (which will be expanded) was enforced. The row and column headings were alphabetic consecutive from a to z , as a result of we tend to enforced solely a sample of info websites (36 websites), that were slot in a two-D matrix within one type (window) as shown in Figure 2, the headings were selected of the rows and columns to start out from a up to f.

Once the IB user sees the Comic Character (Speak facilitate Picture), the higher than type are going to be displayed only once for the user to talk or utter the word "Go". The matrix would facilitate the user select the positioning he would really like to navigate by matching the intercept of the column and row. for instance, if the speaker says "ca", then the system can respond and open the "Hotmail" website then on every time the user navigate a distinct web site. additionally, the user has the flexibility to mention "ON", which might switch the mike on or say "OFF" which might flip the voice recognition of the mike to the off mode. Also, the practicality of the IB was increased by facultative the user to wear down the browser functions like (Home, Refresh, Backward, and Forward) through voice command management. for instance, the user will say "Home" and also the browser can respond and take the user to his/her home page.

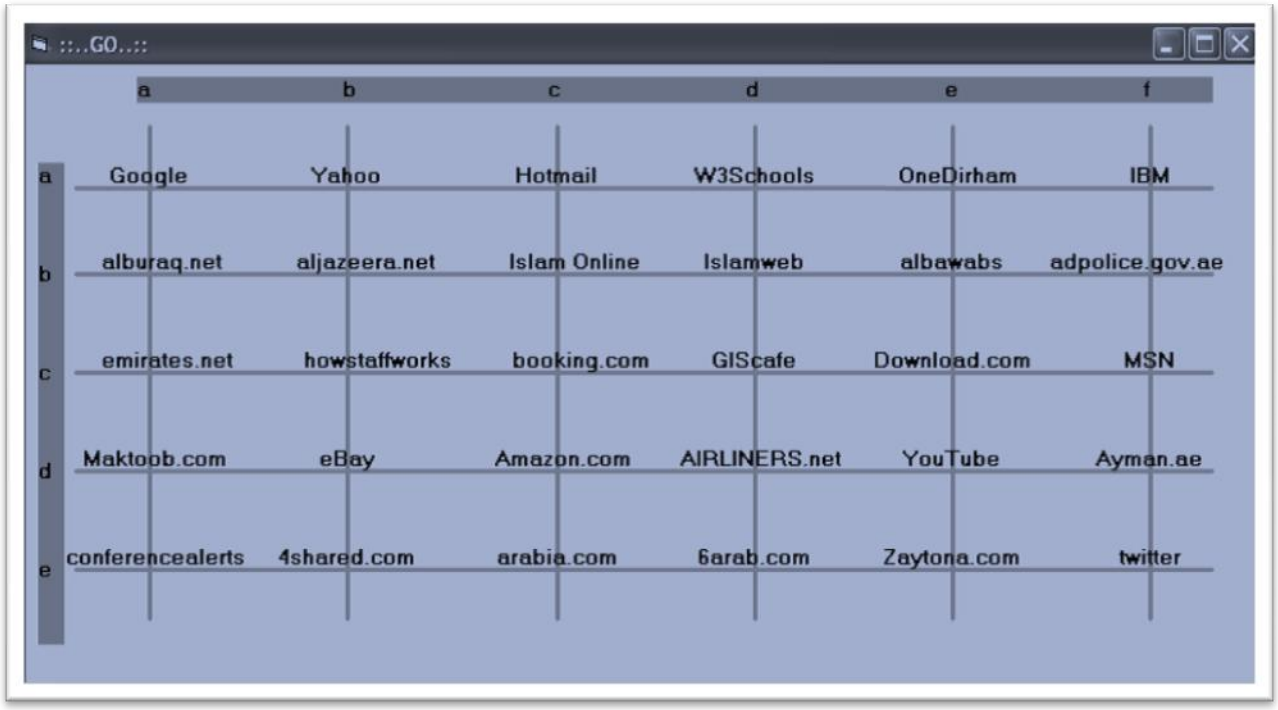

FIGURE 2: Implementing Form of One Matrix.

6. RESULTS

The "vMatrix" algorithm can efficiently facilitate the voice recognition of the website spoken but it depends on the characters announced rather than words. For example if the user wants to go to "Hotmail", he/ she is not going to say "Hotmail" instead he/ she will say "c" "a" as two consequence characters. In this way the proficient of recognizing the voice will be easier and less confusion. While if the user will pronounce "Hotmail" the system may recognize it as two words like "Hot" "mail", and may think that there is another site that starts with the word "Hot". The 2-D"vMatrix" algorithm character recognition is more efficient in this case and less noise and confusion. Also if compared to other implementations, most had just attempted to apply voice for a static single web-page but not for surfing different websites, like adding numeric points beside the links inside the webpage or just say the links as words. Others tried to have a compass mouse algorithm which put reasonable numbers on the website in compared to our user interface which simply has no numbers to search for in order to pronounce them. In our user interface and our algorithm efficiency the user will reach the site he /she desires through an easy and forward steps and spoken tokens.

7. CONCLUSION

These days, cloud computing is taking part in a serious role everywhere the globe. The most gate to access the cloud is browsing. As browsing was designed to cater to solely traditional individuals with no physical disabilities, the physically incapacitated were isolated from accessing the net. IB was developed to assist modify the incapacitated to browse the net simply. This objective was achieved through a mix of voice commands with net browsing; IB could be a voice command driven browser for the disabled. It ought to be recognized that operating exploitation voice commands would offer U.S. opportunities to seek out ideas that might be developed within the close to future. a number of these ideas will be the range and distinction of the pronounced accent whereas looking out, interaction between the strategies of net browser with the matrix system, and therefore the work of the computer by recognizing the eyes of the user (the vision method) as long as he/she is browsing CLOUD SaaS services.

8. REFERENCES

[1] Wikimedia Foundation, I. (2001). "Web browser". Available at: http://en.wikipedia.org/wiki/Web_browser [Accessed 7th November 2010]

[2] Wikimedia Foundation, I. (2001). "Internet". Available at Wikipedia: http://en.wikipedia.org/wiki/Internet [Accessed 10th October 2010]

[3] Farlex, I. (2004, December). "Handicapped person". Available at:http://www.thefreedictionary.com/handicapped+person [Accessed 21st December 2010]

[4] T. Brøndsted, E. Aaskoven. "Voice-controlled Internet Browsing for Motor-handicapped Users. Design, and Implementation". Eurospeech, 9th European Conference on Speech Communication and Technology, Lisbon, Portugal. 2005. pp. 185-188.

[5] Consulting, N. C. (2000). "Internet Browser". Available at: http://www.netdigix.com/gloss/browser.php. [Accessed 22nd September 2010]

[6] K.Peter, C. Wootton, I. Wechsung, S. Moller. "Evaluation of a Voice-Based Internet Browser with Untrained and Trained Users". In proceedings of the 5th International Conference on Universal Access in Human-Computer Interaction. 2009. pp 482-491.

[7] Community, A. M. (2000). "Voice Browsing". Available at: http://www.wirelessdevnet.com/channels/voice/features/voicebrowser.phtml. [Accesssed 12th December 2010]

[8] T Brondsted, E. Aaskoven. "Voice-controlled Internet Browsing for Motor-handicapped Users". Annual Conference of the International Speech Communication Association – INTERSPEECH. 2005. pp. 185-188.

[9] C. Eccher, L. Eccher, D. Falavigna, L. Nardelli, M. Orlandi, A. Sboner. "ON THE USAGE OF AUTOMATIC VOICE RECOGNITION IN AN INTERACTIVE WEB BASED MEDICAL APPLICATION". IEEE International Conference on Acoustics, Speech, and Signal Processing. 2003. pp 289 - 92 vol.2.

[10] Z. Tu, P. Loizou. "SPEECH RECOGNITION OVER THE INTERNET USING JAVA". IEEE International Conference on Acoustics, Speech, and Signal Processing. 1999. pp 2367 - 2370 vol.4.

[11] L.J. Adams, R.I. Damper, S. Harnad and W. Hall. "A System Design for Human Factors Studies of Speech-Enabled Web Browsing". In: ESCA Workshop on Interactive Dialogue in Multi-Modal Systems, Kloster Irsee, Germany. 1999. pp. 137 – 140.

[12] Wixom., A. D. (2009). "Systems Analysis and Design", John Wiley & Sons, Inc.

[13] T. Lemlouma, N. Layaida. "Context-Aware Adaptation for Mobile Devices".In Proceedings of the 5th IEEE International Conference on Mobile Data Management. Barkeley, California, USA, 2004.