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# Web Accessibility for Blind Users

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**Abstract:** *Blind individuals face many issues in their life, one among these issues that's the foremost necessary one is to access internet contents after they are operating or surfing net. Access to web page continues to be a challenge for the visually impaired, because the desires of such community are incredibly various. The access is more hindered by the actual fact that designers still build websites non-compliant with web page Accessibility (WCA). Data on the setting permits humans and vertebrates to grasp regarding sources that are in many alternative directions, notably signals that are outside the detection vary of alternative senses. Sound supply localization is inherently necessary for safety-survival and navigation. Additionally to the natural philosophy cues, the visual cues like object detection, tracking play a very important role within the navigation not just for robots, however additionally for blind individuals, since they're usually obsessed with computing. internet accessibility is one among the terribly essential human senses that are enjoying the most necessary role in human perception regarding encompassing setting. Hence, over the printed papers on this subject, a range of laptop internet products and services are projected by developing new ways for scene understanding. This work aims to introduce associate approach that restores a central perform of the online system that is that the accessibility scene interpretation. The aim of this paper is to analyze the event of an internet navigation aid for blind and visually impaired individuals.*

**Keywords:** *Blind individuals, Equivalent points, laptop internet accessibility, internet substitution system, patches matching, web page Accessibility (WCA).*

## I. INTRODUCCION

Accessibility is defined as the minimum time spent by the user to reach a particular piece of information. Web scene or content understanding could be a difficult task for blind individuals. In fact, one among their greatest difficulties is that the identification of their atmosphere and its parts.

The science & engineering of creating intelligent machine is termed as Artificial intelligence AI, typically known as machine intelligence.

In general, computing is that the study of a way to create machine do things that at the instant human do higher. The scope of AI is disputed: the online holds unbelievable potential for blind laptop users. Most website is comparatively open, represented in digital formats which will be mechanically reborn to voice or refreshable Braille. Computer code programs known as screen readers will convert some content to an accessible type, however struggle on content not created with accessibility in mind. During this system, we've got in brief explored existing studies targeting internet knowledge accessibility for blind users, starting from ancient techniques (Braille output, screen readers, etc.) to semantically increased techniques. Then, we have a tendency to are presenting an current framework, exploring internet module for the blind user to look, so as to improve the illustration of heterogeneous web content, as our scope is limited to the blind student of the school & parameters are like Exam section, faculty feedback etc. & additionally we implement the text writing/typing practice facility using text to speech strategy.

## II. EXISTING SYSTEM

In existing system there was not any facility which user will used to hear the text that he is typing so due to this user may face problem or also can make some mistakes. User needs to use their keyboard to write but visually they can't recognize what exactly they are typing. Our system will help user to hear the text.

## III. PROPOSED SYSTEM

We have developed our system for the blind users so that they can recognize what exactly they are typing and will feel free to access the desktop using keyboard. In our proposed system we are using some parameters like online exam section, essay writing, faculty feedback etc. So that blind students can easily use the system.

#### IV. SYSTEM ARCHITECTURE

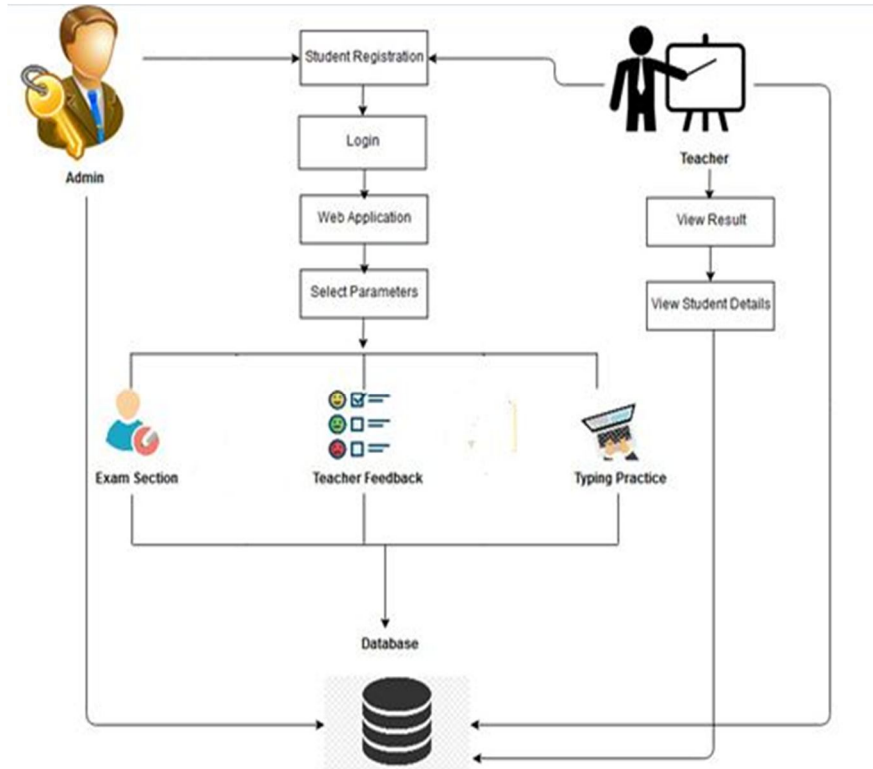
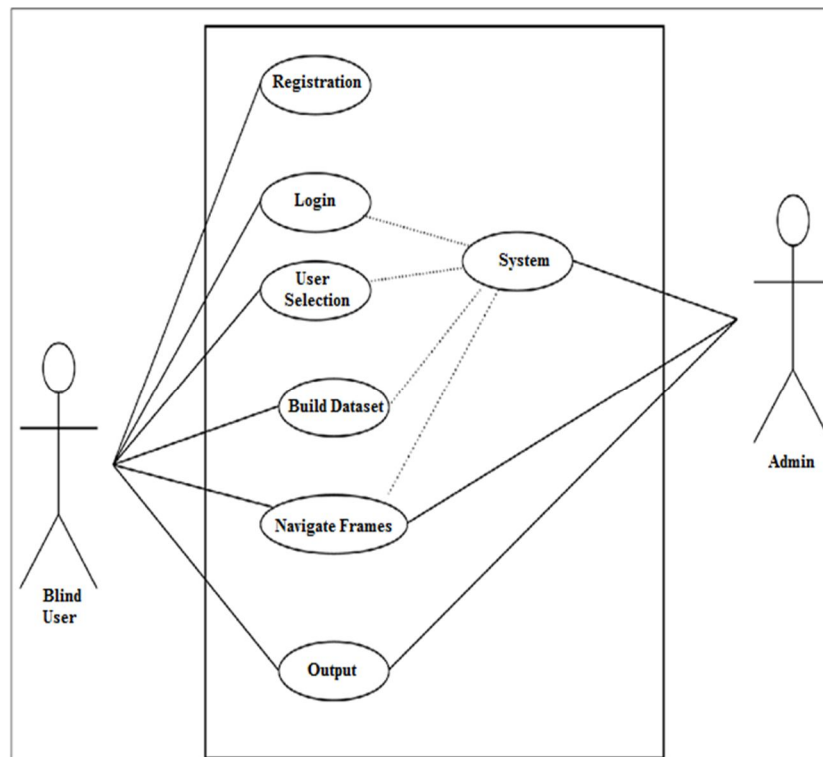
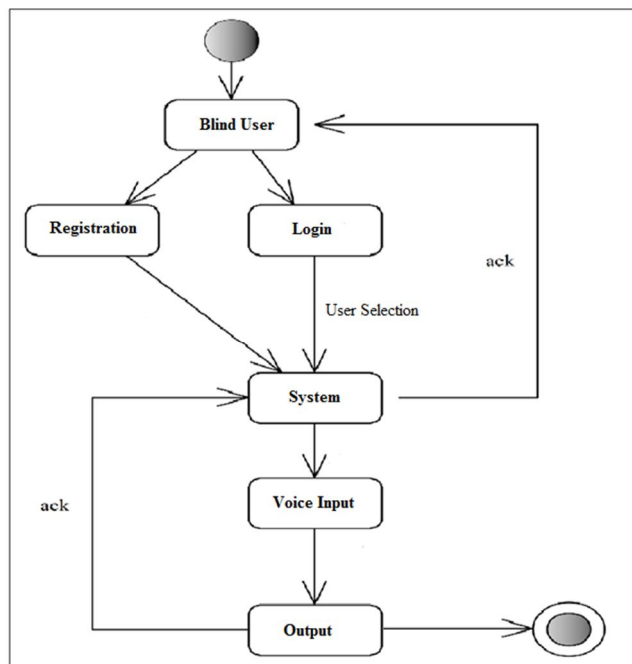


Fig. 1: System Architecture

#### V. UML DIAGRAMS



## VI. FLOW DIAGRAM



### A. Description

We present a new smart system to help blind user, named “Web Accessibility for Blind Users”, in that we are presenting an ongoing framework, exploring web module for the blind person to search in order to improve the representation of heterogeneous web pages which includes parameters like Exam section, faculty feedback etc. This project presents a collaborative approach for web accessibility for blind person system.

## VII. MATHEMATICAL MODEL

### A. System Description

- 1) Let S is the system,  $S=(I,O,P)$  Where,
- 2)  $S=(I,O,P)$  where I is the input, O is the output and P is the process required to get the output
- 3) *Input:* Students data
- 4) *Output:* Blind user can access the website.
- 5) *System Used:* We are using the web access application system to analyze the interaction between the system and the blind users.
- 6) *Process*
  - a) We are taking students details as an input to the system; the details include the student’s personal details.
  - b) When student apply for the exam according to that students marks will get calculated and graph is generated.

## VIII. HARDWARE AND SOFTWARE REQUIREMENT

### A. Database Requirements

- 1) MySQL

### B. Software Requirements

- 1) Operating System: Windows
- 2) IDE: Eclipse Kepler
- 3) Programming Language: Java
- 4) Database: MySQL
- 5) Server: Apache Tomcat

C. *Hardware Requirements*

- 1) CPU Speed 2 GHz Remark
- 2) RAM 3 GB

**IX. RESULTS AND DISCUSSION**

A. *Input*

Here, Whole system has taken many more attributes for the input purpose but here we (author), mainly focuses on the Time and performance of system. Based some few parameters we will getting following analytical result for our proposed system. Following are the parameters:

- 1) Computation Cost.
- 2) Time Consumption.
- 3) Scalable.
- 4) Waiting Time.
- 5) User Friendly.

Parameter	Existing system	Proposed System
A	10	4
B	10	4
C	8	8
D	10	3
E	5	9

Table 1: Result Table

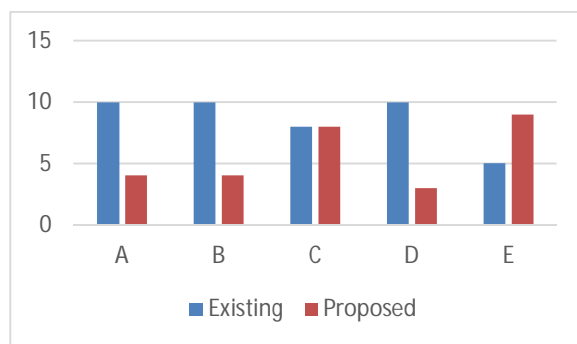


Fig.2: Time line chart of Result Analysis

**X. FUTURE SCOPE**

- 1) *Generating The User Friendly Web Application For Blind User:* As friendly means it is not difficult to learn or understand. While "user-friendly" is a subjective term, the following are several common attributes found in user-friendly interfaces.
  - a) *Simple:* A user-friendly interface is not overly complex, but instead is straightforward, providing quick access to common features or commands.
  - b) *Clean:* A good user interface is well-organized and make it easy to locate different tools and options.
  - c) *Reliable:* An unreliable product is not user-friendly, since it will cause undue frustration for the user. Our system is user friendly also reliable and does not malfunction or crash.
  - d) *Intuitive:* In order to be user-friendly, an interface must be make sense to the average user and should require minimum explanation for how to use it.
- 2) *Conversion of Text To Speech Command:* Text to speech, abbreviated as TTS, is a form of speech synthesis that converts text into spoken voice output.
- 3) To provide equal access and equal opportunity to people with disabilities.
- 4) To explore convenient way to find the things of web on one platform.



## XI. CONCLUSION

In this context, blind users face many problems while browsing Internet. As mentioned previously, many hardware and software based techniques have been developed for this purpose. On one hand, most hardware solutions (e.g., Braille Keyboard and Braille output) are generally expensive and require special equipment to be mounted on each computer system. On the other hand, software solutions (e.g., audio-based speech synthesis: screen readers and talking browsers and gesture-based navigation on touch screens which have been shown especially useful when using Smartphone). As our scope is limited to the blind student of the school, hence we proposed a system of web accessibility for blind person, in which the system in depth simulation results indicate that the planned system considerably we presented requirements gathered from three workshops held with different stakeholders to identify the needs of visually impaired users. The novelty of this study was the identification of two important factors relevant when addressing the needs of visually impaired people.

The first factor identified was the context of use, which influences the accessibility of digital content for the visually impaired users. The second factor was the need to evaluate user's level of visual impairment before applying any adaptation technique on the existing web content.

## XII. ACKNOWLEDGMENT

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## REFERENCES

- [1] Berners-Lee, T, Long live the Web: a call for continued open standards and neutrality, *Scientific American*, vol. 303, no 4 (Dec) 2010, pp. 56-61.
- [2] Brown, A., Jay, C., Chen, A. Q. and Harper, S., The uptake of web 2.0 technologies, and its impact on visually disabled users, *Univ. Access Inf. Soc.*, vol. 11, no. 2, pp. 185-199, Jun. 2012.
- [3] Ferati, M., Pfaff, M., Mannheimer, S., and Bolchini, D., Audemes at work: Investigating features of non-speech sounds to maximize content recognition, *Int. J. Human-Computer Studies (IJHCS)*, 70 (12), 2012, 936966.6.
- [4] Ferati, M., Raufi, B., Kurti, A., Vogel, B., Accessibility Requirements for Blind and Visually Impaired in a Regional Context: An Exploratory Study, In *Proceedings of the 2nd IEEE International Workshop on Usability and Accessibility focused Requirements Engineering (UsARE14)*, August 25- 29, Karlskrona, Sweden, 1316.
- [5] Ludi, S., Canter, A., Ellis, L., Shrestha, A., Requirements gathering for assistive technology that includes low vision and sighted users. In *Usability and Accessibility Focused Requirements Engineering (UsARE)*, 2012 First International Workshop on (pp. 25-31). 2012.
- [6] Jayant C., Acuario C., Johnson W. A., Hollier J., and Ladner R. E., VBraille: Haptic Braille Perception using a Touch-screen and Vibration on Mobile. *The ACM SIGACCESS International Conference on Computers and Accessibility (ASSETS'10)*, 2010.
- [7] Kouroupetroglou C., Salamasis M., and Manitsaris A., A Semanticweb based framework for developing applications to improve accessibility in the WWW. *Proc. of the 2006 Inter. Cross-Disciplinary Workshop on Web accessibility (W4A '06)*, 2006. pp. 98 - 108.
- [8] Bou Issa Y. et al., Analysis and Evaluation of the Accessibility to Visual Information in Web Pages. *Inter. Conf. on Computers Helping People with Special Needs (ICCHP)*, 2010. Vienna, Austria.



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