

# VOICE BASED EMAIL SYSTEM FOR BLIND PERSON

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## ABSTRACT

Internet has become one of the basic amenities for day-to-day living. Every human being is widely accessing the knowledge and information through internet. However, blind people face difficulties in accessing these text materials, also in using any service provided through internet. The advancement in computer based accessible systems has opened up many avenues for the visually impaired across the globe in a wide way. Audio feedback based virtual environment like, the screen readers have helped Blind people to access internet applications immensely. We describe the Voicemail system architecture that can be used by a Blind person to access e-Mails easily and efficiently. The contribution made by this research has enabled the Blind people to send and receive voice based e-Mail messages in their native language with the help of a computer

**Keyword :** - Blind , Internet, Voicemail, Architecture , Environment.

## 1. INTRODUCTION

We have seen that the introduction of Internet has revolutionized many fields. Internet has made life of people so easy that people today have access to any information they want easily. Communication is one of the main fields highly changed by Internet. E-mails are the most dependable way of communication over Internet, for sending and receiving some important information. But there is a certain norm for humans to access the Internet and the norm is you must be able to see. But there are also differently abled people in our society who are not gifted with what you have. There are some visually impaired people or blind people who can't see things and thus can't see the computer screen or keyboard. A survey has shown that there are more than 240 million visually impaired people around the globe. That is, around 240 million people are unaware of how to use Internet or E-mail. This system aims at developing an email system that will help even a visually impaired person to use the services for communication without previous training. The system is completely built on interactive voice response which will make it user-friendly and efficient to use. The entire project is based on voice interaction which means speech recognition and synthesis.

### 1.1 Problem Definition:

The visually challenged people find it very difficult to utilize this technology because of the fact that using them requires visual perception. However not all people can use the internet. This is because in order to access the internet you would need to know what is written on the screen. If that is not visible it is of no use. This makes internet a completely useless technology for the visually impaired and illiterate people

## 1.2 Purposed System

The project titled voice based email system is a web based application developed that allows blind people to use Email system easily. The proposed system focuses on providing the basic functionalities like composing, reading, sending and receiving emails along with voice based interaction. This facilitates working with each of the above features as well as the provision for sending text as well as voice based email. The proposed system allows blind people to use Email system easily. As the input to the system does not use keyboard or mouse, users can easily give input by speaking the message. Thus, the system that we are developing is entirely different from the existing ones. Unlike other systems which focus only on a particular set of people, our system is focused on visually challenged people too. The user will be able to give commands to the system, which, the system will follow. Moreover, the system will prompt the user to perform specific actions to avail respective services.

## 2. LITRATURE SURVEY

### 2.1 Existing Algorithm/program:

There are a total number of 4.1 billion email accounts created until 2014 and there will be estimated 5.2 billion accounts by end of 2018. this makes emails the most used form of communication. The most common mail services that we use in our day to day life cannot be used by visually challenged people. This is because they do not provide any facility so that the person in front can hear out the content of the screen. As they cannot visualize what is already present on screen they cannot make out where to click in order to perform the required operations. For a visually challenged person using a computer for the first time is not that convenient as it is for a normal user even though it is user friendly.

### 2.2 Disadvantages of existing system:

The existing mail services do not provide easy access to the visually challenged people because they are in written format or any type of attached information and there is no read out option to hear the mail that is received to their mail addresses.

One of the researches led to the development of an application that could help the user to send and receive mails in English language. It was found that the proposed architecture performed better than the existing architecture at the time of this research. In that project, speech-to-text and text-to-speech conversion techniques were applied for providing easy access to blind people.

### 2.3 Purposed approach and its advantages over existing system:

- User friendly (as Blind person can easily use web based application).
- Easy Storage of data.
- More efficient.
- Requires less effort and time.
- The system that we are developing is entirely different from the existing ones. Unlike other systems which focus only on a particular set of people, our system is focused on visually challenged people too.
- It also helps handicapped and illiterate people.

## 3. DESIGN

### 3.1 User Interface Design

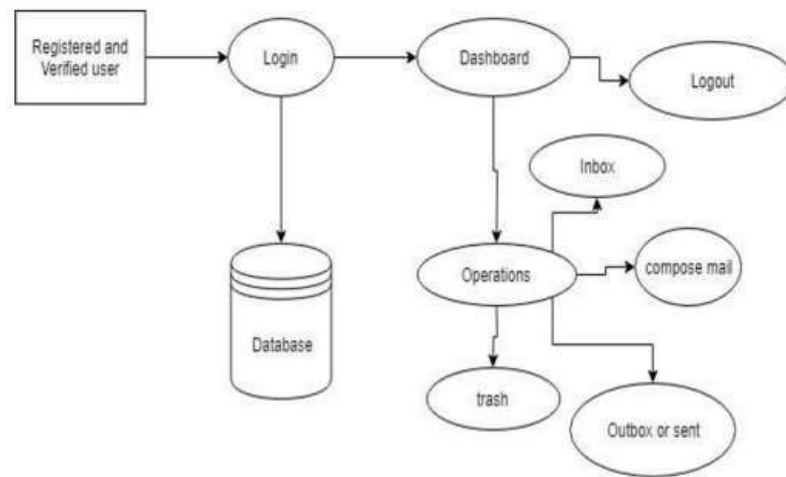
The user interface is designed using HTML and Javascript. The complete website focuses more on efficiency in understanding the Voice recognition than the look and feel of the system as the system is primarily developed for the blind people to whom the look and feel won't be of that primary importance as the efficiency of understanding the prompting would be.

### 3.2 Database Design

Our system maintains a database for user validation and storing mails of the user. There are a total of five tables. The Inbox, Sent-Mail schemas will store all mails of the respective service that belongs to that particular user.

### 3.3 System Design

Our System is voice oriented. When user is over every legal space in website, it will receive voice messages where user is right now. If normal people don't want this feature they can turn it off. The system work flow is defined in diagrams.



## 4. CONCLUSIONS

It is concluded that the system will work well and thus it will fulfil the end users requirement. The system is tested and errors are accurately removed. This application will be accessed from one or more than one system and hence login from more than one system is tested.

It involves the development and implementation of a real-time email interaction system for visually impaired. We have planned to develop a system that could facilitate the visually challenged individuals to access email services in an efficient way. Our application can help in overcoming some of the drawbacks of the existing email systems. In this system, the use of keyboard has been eliminated completely and thus reduces the cognitive load of remembering keyboard shortcuts as well as the position of the keys on a keyboard. The user only requires listening to the voice commands given by the system and respond accordingly in order to get the desired operations performed. This requires user to speak the operation in the email application and then the system will perform the required operations. The user would be requested to feed info through voice inputs whenever required and system will ensure the authentication of the user details.

It also helps handicapped and illiterate people.

## 5. APPLICATION

This project is proposed for the betterment of society. This project aims to help the visually impaired people to be a part of growing digital India by using internet and also aims to make life of such people quite easy. Also, the success of this project will also encourage developers to build something more useful for visually impaired or illiterate people, who also deserves an equal standard in society.

The individuals having typing problems can also take advantage of this system.

## 6. FUTURE SCOPE

For people who can see, e-mailing is not a big deal, but for people who are not blessed with gift of vision it postures a key concern because of its intersection with many vocational responsibilities. This voice based email system has great application as it is used by blind people as they can understand where they are. E.g. whenever cursor moves to any icon on the website say Register it will sound like “Register Button”. There are many screen readers available. But people had to remember mouse clicks. Rather, this project will reduce this problem as mouse pointer would read out where he/she lies. This system focuses more on user friendliness of all types of persons including regular persons, visually compromised people as well as illiterate.

## 7. ACKNOWLEDGEMENT

We owe our deep gratitude to our parents and teachers who took keen interest in our project work and helped us in improving our application. They always up front to motive and encourage us for bringing out this project successfully. We would like to thank all the people who helps us in this project and whom we might not have mentioned here

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