Voice Email Assistance System for Visually Challenged People

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***Abstract*—In this day and age internet is coming among the fundamental necessities in our daily activities. Most people are basically accessing the important information, data and furthermore utilizing for correspondence through internet. However, accessing this web-based data and using any support made available online are both difficult for visually challenged persons. The development of system based open models contains a broad range of open entrances for those who are allegedly impeded throughout the worlds. Blind persons have benefited greatly from the accessibility of voice-based web crawlers, screen-per-clients, and sound-based virtual environments. We outline the voice-based mail structure design that an outwardly impaired person can utilise to effectively and competently will messages. The accountability provided by this evaluation has allowed those who are outwardly unable to transfer and get voice-based email messages with the use of a computer.**

***Keywords*— Speech-To-Text, Text-to-Speech, Chatbot, User-Friendly, Visually Impaired, Interactive Voice Response.**

I. INTRODUCTION

At the present period of correspondence, the web is significant. The web has turned into the groundwork of the present world. Without the web, task cannot be finished. Email, or electronic mail, to be the most indispensable part of everyday life. As per the survey, the approximately 260 million are the outwardly hindered individuals around the world [1]. This additionally suggests that these people have no information on the most proficient method to use the web or email, as well as additional innovative headways. Individuals with the inability face troubles with getting to the Web and the administrations given by it. A large portion of them can't get to and not keen on getting to the administrations given by the web in view of the failure and there isn't some other opportunities for those individuals to utilize the administrations all alone [1][2][3]. The answer for this issue is to affect the thirdindividual who has no inabilities except for this probably won't be most ideal way for giving protection to the client. The suggested framework is made intended to beat the inclusion that third individual can send these messages. The idea behind creating this system is to create a simple and user-friendly system for the clients who are facing problems in interacting with system and avail the service. The system will be beneficial for the people who are visually impaired or illiterate and also who are new to understand the system concepts. The

framework has created utilizing Discourse to-Message and Message to-Discourse that assists handicapped with sending but also getting messages all alone without recollecting the console alternate routes but also the area of keys by simply utilizing speech orders they will get to the mail [4][5].

II . LITERATURE REVIEW

It is surveyed that there are more than 5.59 trillion mailing accounts at present in2022 and also it has generally 789.62 billion records close to the completion of 2024[2]. It is moreover surveyed that at present an amount of 235 billion wireless clients in India in year 2022[9]. It indicates messages the widely utilized type of correspondence. The general mailing structures has no technique for analysis or Talkback organization. The most broadly perceived mail helps that we will by and large use in our regular daily existence cannot utilized by apparently tried persons. It is the direct output that they get no office all together since the individual in front will hear the substance of the display. Since they can't envision which thing is currently coming on display they can't figure out at which point they snap and play out to normal undertakings [4].[6]For an obviously weakened individual using a PC or PDA structure strangely isn't that useful in every practical sense, for a standard client in spite of the way that it is not difficult to utilize. Anyway there are a couple of screen for each clients provided then moreover these persons suffer a couple of small problems. Screen per clients stand up anything that content comes on to the screen and they just perform their particular exercises the person ought to use console simple courses since mouse region is not recognized by the display per clients. This suggests 2 points; first is the client cannot take the mouse arrow since that is very seriously organized and in case pointer region not entirely set in stone and next is the client must have learned about control centre at any spot each and where and how key has set.[7] The client which is new to PC is not going to consequently using the assistance because clients are not mindful about the security regions. In this system we will providing a login system that will check the user's authenticity by confirming the credentials provided by the visually challenged person so that nobody else can access his information and data by taking misuse action on the system as the system is user's friendly. Moreover there are a couple of difficulties looked by obviously weakened people while using phone systems. The given proposed framework contains essentially three plans i.e., UI Plan, Data set Plan and Framework Plan. In the UI Plan we primarily plan the site pages by the assistance of HTML and CSS3 that are utilized by the clients for communication. Then, at that point, comes the Information base Plan, we can say by name just that it is significant as it is having all the records, certifications of different clients and administrator. Its primary point is client verification and putting away sends. The Framework Configuration comprise of essentially two modules, they are TTS and STT module and Mail Programming Module. In the Mail Programming Module, we uses SMTP strategy to move mail starting with one client then onto the next. All of these are a couple of drawbacks of the ongoing structure that we will vanquish inside the application we are making. The Voice based email framework is proposed to conquer downsides of conventional ASR and screen understanding frameworks. The framework comprises of cutting edge includes so that visually impaired individuals can work without any problem [6][7][8].

1) SPEECH-TO-TEXT CONVERTER:

Discourse to-message converter helps as to get input for the framework. At the point when an individual talks through mouthpiece and is perceived by the framework, the discourse is then changed over to message. Our discourse to-message framework straightforwardly gets and changes discourse over completely to message. It helps the outwardly disabled individuals with the goal that they have some control over the entire framework by giving contribution as discourse and don't bother stressing over console easy routes or screen per

users. In Voice based email framework, the clients talk the username, passwords for signing into the framework and furthermore when clients pick activities to be performed like showing inbox, sent sends, make mail and so on. Discourse acknowledgment frameworks can be separated into a few blocks: highlight extraction, acoustic models' data set which is made in light of the preparation information, word reference, language model and the discourse acknowledgment calculation [9][10][11].

2) TEXT-TO-SPEECH CONVERTER:
The system's output can be obtained with the use of a text-to-speech converter. The output from every system action is always in text format, but it is meaningless to those who are blind. They hear the text after it has been turned into speech. It is particularly practical since no keyboard shortcuts or other actions are necessary for the outputs to show. When a user instructs a voice-based email system to read emails that have been sent or placed in their inbox, the text-to-speech converter turns the emails' text into speech that the user can understand. When providing instructions, text-to-speech is also employed on gadgets like handheld GPS systems to proclaim street names [12][13][14].

3) INTERACTIVE VOICE RESPONSE(IVR):
IVR is a cutting-edge technology that demonstrates the interaction between the user and the system, which reacts by using the keyboard for the appropriate voice messages. It carries out tasks and makes it possible for users to engage with the email host system through keyboard. The IVR conversation then enters the picture, allowing consumers to quickly inquire. These systems answer with pre-set audio voiceovers that provide the user the way forward and help them go forward. Large amounts of pre-recorded audio are required [15][16][17].

III PROPOSED FRAMEWORK

Using this technology, we are developing a system that, in contrast to other mailing systems in use today, employs voice instructions to carry out activities. Accessibility was the main consideration when developing the entire system. Regardless of whether a person is physically challenged or not, a system can be accessed. In this system, our main focus has been on various technologies such as Speech-to-Text (STT), which records user speech and converts it to text, Text-to-Speech (TTS), which renders responses from text into speech, Chatbot for enhancing the human-like interaction of conversations, and mailing modules for sending and receiving emails. The process is displayed in Figure1 [18][19][20].The Proposed Frameworks depicts the whole process about the voice mail system. If you are a new user to system then you have to register first and then login to the system to get verified by the system. Once you are verified then you can perform the task, but if you are already an user then you can simply move ahead to the homepage of the system from where you can perform the operations. User can know about the mail in inbox, can read the mails received and also user can compose its new mail for sending it to the user by passing on the commands through voice to the system. Users can speak the “Send” command to send is user friendly and it can be accessed by any person and also have many advantages [21][22][23].

A. ADVANTAGES

1. The framework needn't bother with any snaps of the mouse to send and gets messages [24].
2. It is effectively available and is absolutely founded on the orders passed on by the client for the sending and getting messages [25].
3. The chatbot is utilized to make the discussion smooth and more that like of a human [26].
4. The proposed framework contains the login system for the security perspectives so that no unverified user can perform misuse of the system and can access other user′s information [27].

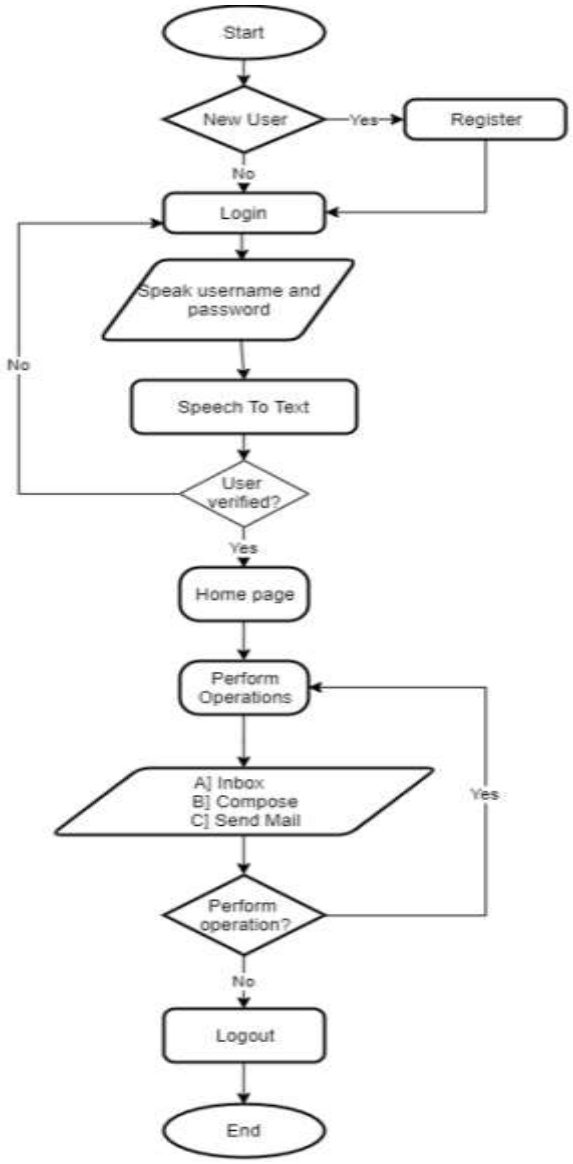

Figure1 : Proposed Framework

IV. IMPLEMENTATION

A. Registration

User must select Register as their choice. If the visually challenged client's command in the voice is not very clear, the incorrect record will be saved into database system, making it impossible to send or read emails in the future. This is why we need a reliable second person to help with registration. If user is already registered he has to just login on login portal by providing the credentials. In order to access their mail without having to enter their password each time, users must establish a 4-digit keyword that is unique for privacy reasons. The login portal is showed in Figure 2 and Menu Page in Figure 3 [28][29][30].

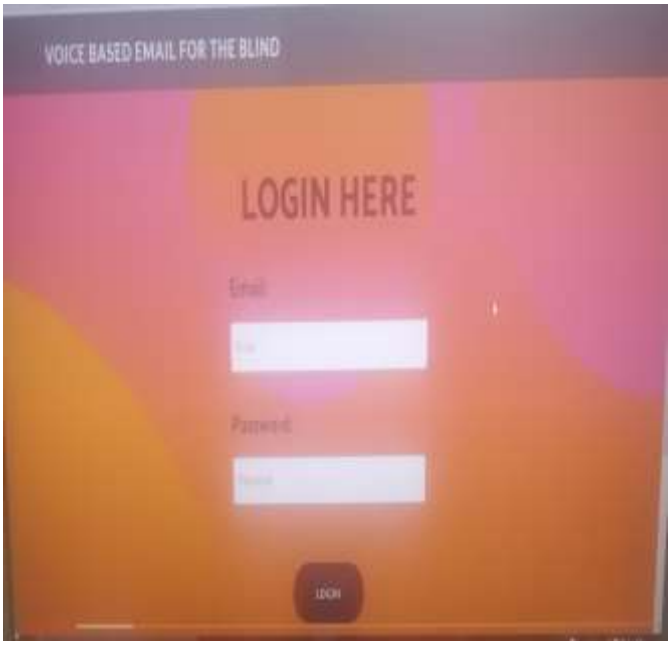

Figure 2 : Login Portal

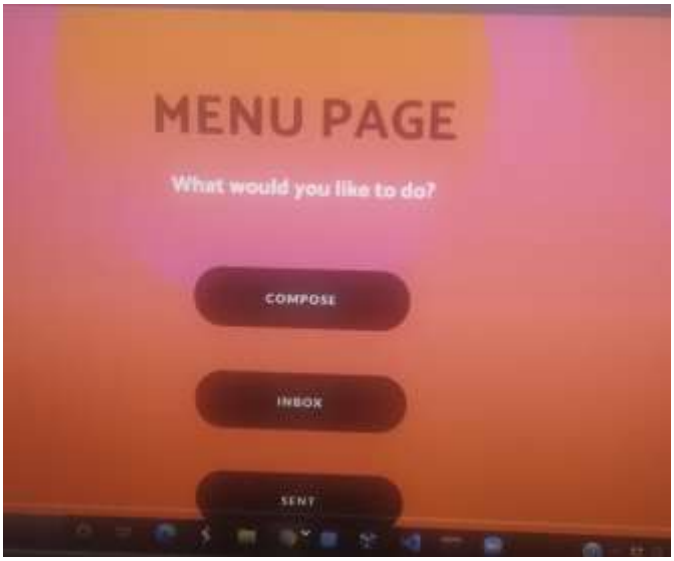

Figure 3: Menu Page

B Compose Mails

In order to compose an email user has to speak "Compose" keyword after which an interface will be opened up that asks for recipient email id , subject of the mail content and body of the mail and then command "send" to send the mail to the respected mail id. The compose mail interface is shown in Figure 4 [31][32][33].

Figure 4: Composed & Send Interface

C. Reading Mails

If the client wants to read an email from the memory, he has to speak command "inbox" after which the inbox comes on screen and the user speaks unread and the system will read the newly arrived mails for the user as per his command. The interface is shown in Figure 5. and Figure 6. That arrives after read command [34].

Figure 5. Inbox Interface

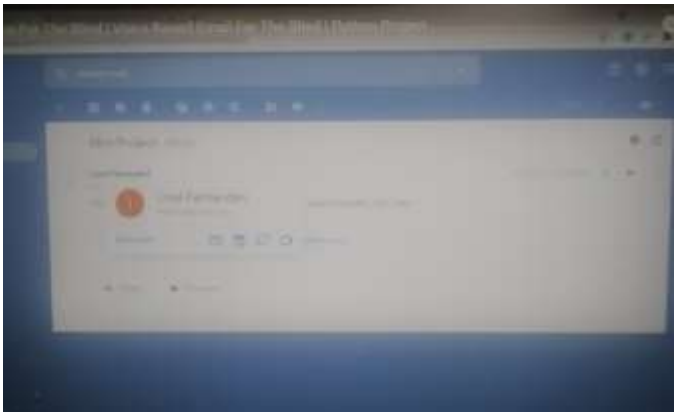

Figure 6: System Reading Mail

D. Exit

Client needs to speak Exit as an order for let the framework in on about its advantage. This order will allow him to move out from the framework.

V RESULT

The framework plays out the undertaking according to the client's orders. The outcome is displayed in Figure 2. The figure shows the client's result screen and the working of the mailing framework. In the principal line it gets some information about the login accreditations to confirm the client. When the client is checked. Then, at that point, it is getting some information about the client's order to play out the procedure on the framework. The client talks the send order according to its request for interest to send an email to the next individual , then the bot gets some information about the beneficiary's mail at where mail is to be sent , The client talks the mail id of the beneficiary and the bot advises the id and subsequently it gets some information about the subject and the substance of the mail that will be composed and shipped off the client . The client talks the substance of the mail body and the bot read the entire mail made and requests the last time for affirmation to send the mail composed or, more than likely any progressions should be acted via the post office composed. As the client caused it to affirm by

passing on the order the framework send the mail to the beneficiary 's mail id and afterward talks the message "Mail sent effectively".

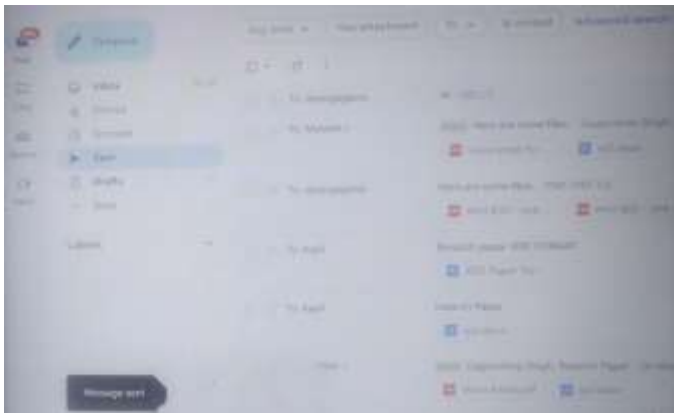

Figure 7: User's Output Screen

VI. CONCLUSIONS

The fundamental goal of the task is to lay out email correspondence in view of voice orders for blind individuals on account of their failure to utilize web and its capabilities. We accomplished in getting concealed sends giving shippers mail id, subject, message as speech in the result. We accomplished involving text-to-discourse, discourse to-message libraries and furthermore carried out a chatbot from viable correspondence between the client and the framework, it can lay out email correspondence as well as answer the inquiries posed to by the client. We had made a user friendly model for visually impaired as well as the illiterate people to solve their problem about interaction with the system.

VII PROBLEMS FACED

Authors have to face a couple of difficulties while developing this framework for the visually challenged people like they were not able to get proper guidance after referencing various research papers and books available. They suffer while implementing this framework since there are not good softwares currently available for it due to which authors faced difficulty in getting the desired result.

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