Smart E-Mail Service For Blind

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Abstract- *The technology has a greater impact on lifestyle of living but the world is still at progress of innovation for techs related to physically impaired humans. Electronics mails have been a standard of communication for most of business has well as corporate world. In this league of race the physically impaired must not be left behind with tech. Previous studies have resulted in various innovations which have made the life of physical impaired much more easier to match up real world race, the researches includes the innovation of Speech based email system using licensed APIs and SMTP protocols which leads to the most important form factor of cost ,which makes it unaffordable for the middle class users. Hence the proposed system is cost efficient since it's using the open source APIs and libraries, hence making the facility's available to each and every user.*

Keywords- Python, Text to speech, Django

I. INTRODUCTION

Web assumes a significant part in this day and age of correspondence. Today the planet is running on the possibility of web. No work are frequently kept away from utilization of web. electronic message i.e., email is that the most imperative part in everyday life. In any case, some individuals in this day and age don't abilities to shape utilization of web, some are visually impaired or some are uneducated. Thus, it goes hard to them when to gauge during this universe of web. These days there are different innovations accessible during this world like screen per users, ASR, TTS, STT, and so on however these aren't that much proficient for them. Around 39 million individuals are visually impaired and 246 individuals have low vision and furthermore 82 of people living with visual impairment are 50 matured or more. we've to frame some web offices to them all together that they can utilize web. Hence, we thought of our task as voice-based email framework for blinds which can help tons to outwardly impeded people groups and furthermore uneducated people groups for sending their sends. The clients of this procedure don't had the opportunity to recollect any fundamental data about console alternate ways likewise as area of the keys. Basic snap tasks are required for capacities making framework simple to use for client of all ages section. Our framework gives area of where client is provoking through voice all together that client doesn't have to stress over recalling which click activity, he/she needs to acknowledge. inside the past framework with the help of screen perusers it's hard for dazzle man to get to E-mail framework and PC working effectively on the grounds that it's boisterous sound interface. These accessible frameworks require utilization of console which is very hard for daze individuals to recognize and recall characters of console. Along these lines, we carry out voice-based E-mail framework for daze man and it likewise helps impaired and ignorant individuals. This undertaking targets fostering an email framework which will help even a guileless, outwardly impeded individual to utilize the administrations for correspondence without past preparing. The framework doesn't need the usage of console. All things being equal, it'll work just on mouse activities and discourse change to message. this method additionally can be utilized by any typical individual, for instance , by somebody who can't peruse.

II. SYSTEM IMPLEMENTATION

The system is implemented with Django framework and in python programming language.

The proposed system is designed with web user interface. The user has to provide a voice command input to the proposed system, the system will convert the audio input into textual format for processing. The input is also pre-processed in order to remove input mismatches and grammatical mistakes. Once's user provides the credentials for logging into the system, a secure web socket connection is established to the user mail server. A two-way handshake is enabled to perform GET/POST request from the mail servers. On successful login the user is directed to a user option page where the proposed system reads out the user option via its audio output device, in order user to provide future inputs. The user can now provide the voice command for respective user option. On receiving the voice command from user, the input is validated and pre-processing to input is done and it's converted from audio to text format.

The user is provided with options like reading the inbox mails , composing a mail , reading of sent mails as well as deletion of mails . On selection on any options GET/POST request is made via by Simple Mail Transfer Protocol . The

result of the respective operations selected by the user is rendered in form of audio output via audio output device.

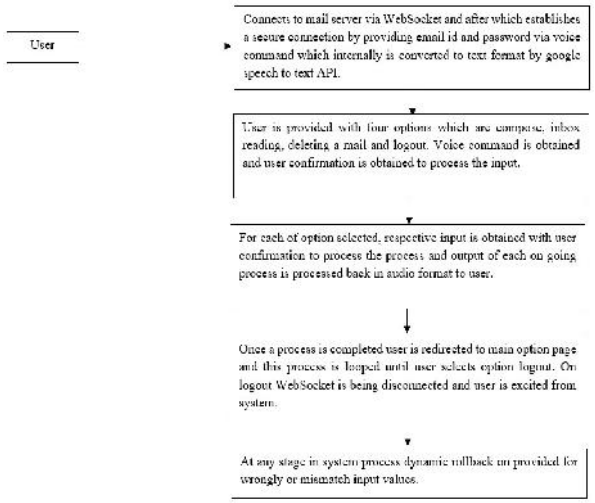

Figure1. High level design of proposed system.

The proposed system architecture is designed to be robust in scenario of varying input mismatches or in case of internal server error of mail server or in case of disconnections. The system exist from mail server on logout voice command by user , after which the web socket is disconnected and SMTP protocol revokes the handshake between application and mail server.

III. SYSTEM DESIGN

Proposed system is designed in following way.

Algorithm for Workflow of proposed system

Step 1: Loading the Web UI interface. User provides voice command for entering credentials. The audio format input is converted to text format using texttospeech() function before which the input is prepossed using covertSpecialChar() function in order to convert user credential to SMTP format.

Step 2: Once successful login to system , the user is provided with list of options like Inbox, Sent,Trash ,Compose or Logout . User can select any of the option via voice command of particular options prompted by system, which is done using the help of optionView() function.

Step 3: On user selecting a particular option function related that option is intitated.

Step 4: The SMTP protocol is used to fetch values from mail server for functionalities of user selected option which is done using mail helper function which does a GET/POST requests to mail server.

Step 5: The output is converted from text format to audio format using text to speech API and system is rollbacked to user selected options.

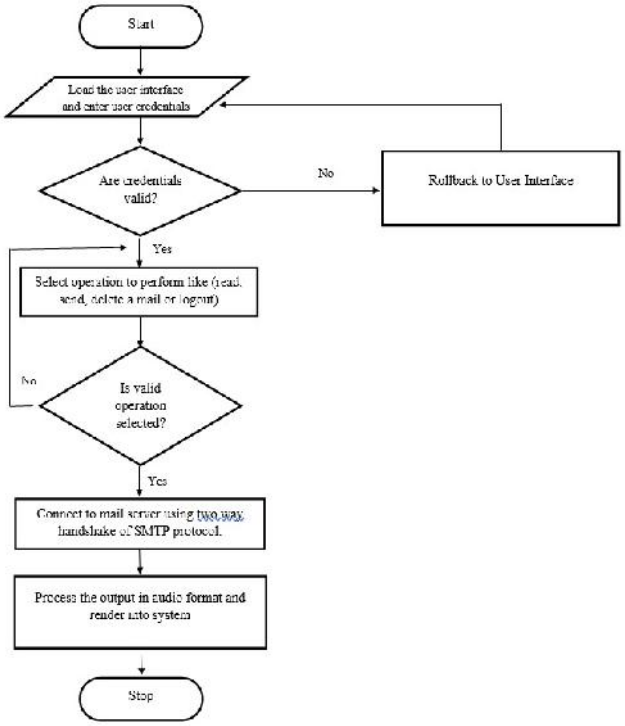

Figure 2. Flowchart of proposed system.

Algorithm for User Interface

Step 1: Login with user credential when prompted by system.

Step 2: On successful login, user is prompted with all the available user options. User has to provide voice command to select options.

Step 3: Once user selects the option, if input is not audible step 2 is repeated else respective option functional guideline prompting is done by the system.

Step 4: Once user selected option processing is done output is prompted by system whether it's a success or failure and step 2 is repeated.

Step 5: User can terminate or sign out from system by providing logout command whenever step 2 process is initiated by the system.

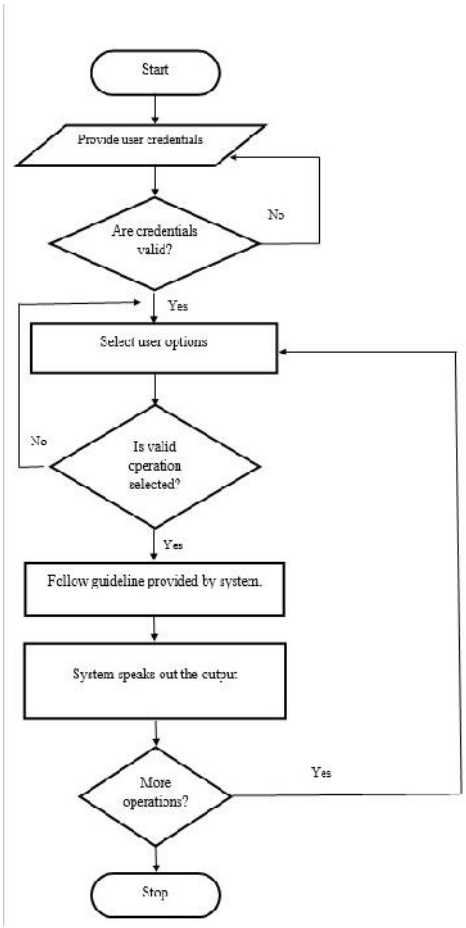

Figure 3. Flowchart User interface of proposed system.

IV. **EXPERIMENTAL RESULTS**

Proposed system is developed and following experimental result is obtained.

Figure 2 shows the home page of proposed system UI , here system renders voice output providing guidelines regarding login for system i.e email id and password of user mail server.

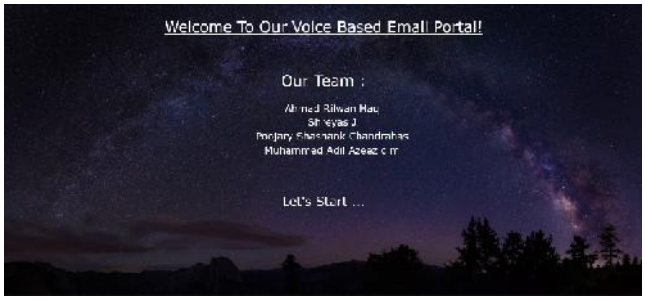

Figure 2. Homepage of proposed system.

Figure 3 describes the user options available once after user is logged in , in the phase the proposed system provides voice instruction for the user to select the required user options.

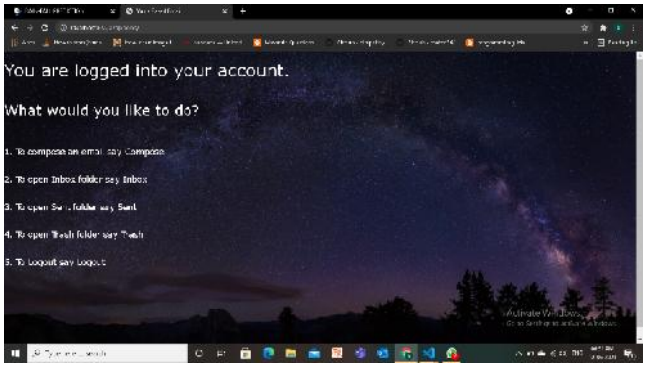

Figure 3. User option page of proposed system.

Figure 4 describes the user option Composing of email, in the phase the proposed system takes user input via voice command for details like receiver email id , attachment details , messages etc.

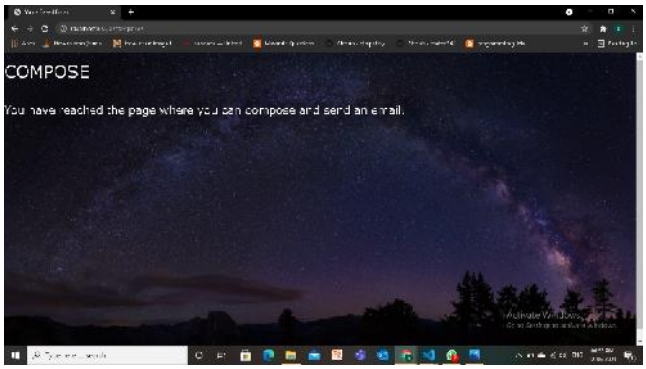

Figure 4. Compose page of proposed system.

Figure 5 shows the user option reading inbox mails of user, here proposed system provides options like reading of unread mails or search a specific mail or navigate to user option page.

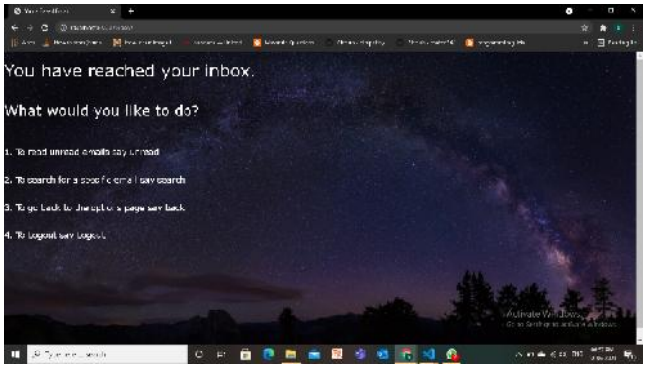

Figure 5. Inbox page of proposed system.

Figure 6 shows the sent mail page were proposed system renders out the mails sent by users.

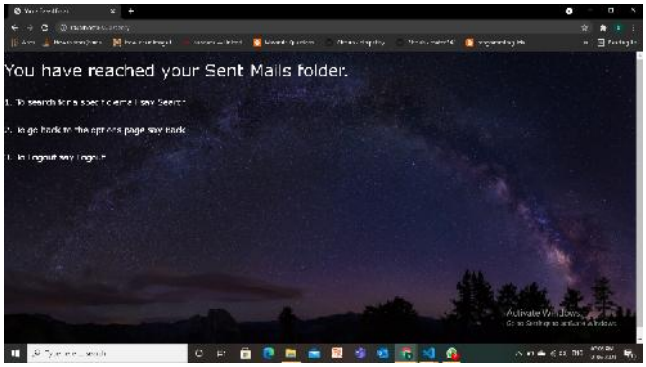

Figure 6. Sent Mail Page of proposed system.

Figure 7 shows the trash page of proposed system were the system reads out the mails that are present in the trash bin of user mail server.

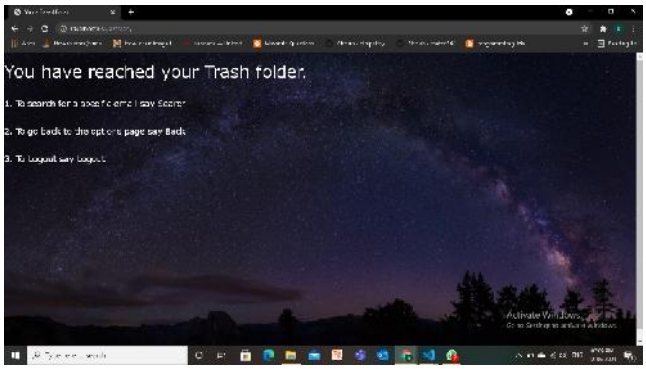

Figure 7. Trash Mail Page of proposed system.

V. CONCLUSION

The problem of physically disabled candidates is being bridged by creating an web application. This web app allows these users to interact with real world with the voice commands. It allows the user to perform mail transaction like another normal user being used in mail server. It bridges the gap between the mutual communication issues caused due to lack of vision impaired by the user. This web app results in efficient usage of time. The system helps to improve the performance. Maintaining the project is easy and manageable. It is easily understandable by the user.Future work that can be added to this project may be, the web app can be converted into android applications. It can be modified in such a way that application can be used by organizations other than educational institutions. Organizations can add functionalities depending on their needs.

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