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Intelligent Voice Mail System

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Abstract
As technology is advancing, people are coming closer to digital life and digital communication. In this modern period, there are many ways to communicate with others through the internet. Common mode of communication among people through internet is Email. A lot of Business and personal information is exchanged over emails in today's time. Some people cannot use these technologies because either they are illiterate or cannot see the screen. Using this system entitled Voice-based Bare Email for Visually Impaired, it will make the email system very easily accessible to visually challenged people and also help society. This application uses text-to-speech and speech-to-text converters so that visually challenged people can operate the system easily. This system reduces the complexity of remembering the characters or information regarding keyboard shortcuts. Every function will be based on simple voice commands so that those people can easily make use of the technology. It also includes various expert systems, natural language processing, machine vision, and speech recognition. To understand and analyze human language such as English by extracting metadata from keywords, emotions, relations, and concepts in Natural Language Processing.

Keywords: Text-to-Speech, Speech-to-Text, Natural language processing (NLP), Digital Communication

1. Introduction:

Machine learning is an application of artificial intelligence (AI) that has systems the flexibility to mechanically learn and improve from expertise while not being expressly programmed. Artificial intelligence (AI) is a technique where machine can become more human and thereby reducing the distance between human being and the machine. Henceforth, simply put, AI facilitates human interaction with machines effortlessly. The basic premise of machine learning is to make algorithms that may receive input file and use applied math to predict an output value inside a suitable vary. All functions are supported easy mouse click operations creating it terribly straight forward for any style of user to use this system. A web system is claimed be perfectly accessible provided that it is used with efficiency by all sorts of individuals whether able or disable. The Contemporary systems do not provide this accessibility. Thus the system we tend to is totally different from the contemporary system. This application utilizes text-to-speech (TTS) and speech-to-text (STT) conversion technologies to enable effortless interaction for visually impaired users. By removing the necessity to remember characters or keyboard shortcuts, it streamlines navigation and improves accessibility, enhancing the overall user experience. Every function will be based on simple voice commands so that those people could easily make use of the advancements.

2. Related Work:

2.1 Mamatha, A., Jade, V., Saravana, J., Purshotham, A., & Suhas, A.

The system consists of advanced features so that blind people can operate easily. The proposed system also makes use of mouse click events.

2.2 Pathan, Naziya, et al.

The existing web browsers can play audios and videos, but for that also the user has to request by typing some text to search after that the user will be able to play the audio and videos by using Graphical User Interfaces.

2.3 Jayachandran, K., & Anbumani, P

Voice based email system in paper contributes in such a way that enables blind people to send and receive voice-based email messages in their native language. The architecture of this system performs much better than that of existing GUIs.

2.4 Sawant, S., Wani, A., Sagar, S., Vanjari, R., & Dhage, M.

Speech based email system is proposed for both blind and illiterate people. Instead of traditional technologies like IVR that uses screen readers and Braille keyboards, the proposed system uses speech-to-text and text-to-speech conversions. Along with STT and TTS API, Php Mailer and Php-IMAP is used for sending and fetching mails. For searching mails in inboxes, pattern matching algorithm is used. So, in this system Knuth Morris-Pratt algorithm is implemented.

3. Proposed Work:

In the proposed system, the computer machine is going to perform specific operations. The application is voice-based allowing visually challenged people to send and receive emails easily. It converts the user's spoken voice into text and the text to voice and acts accordingly. The main advantage of this system is that the use of a keyboard is eliminated. The user must reply solely using their voice. This application uses text-to-speech (TTS) and speech-to-text (STT) converters as well as NLP is used to understand and analyze the human language**.**

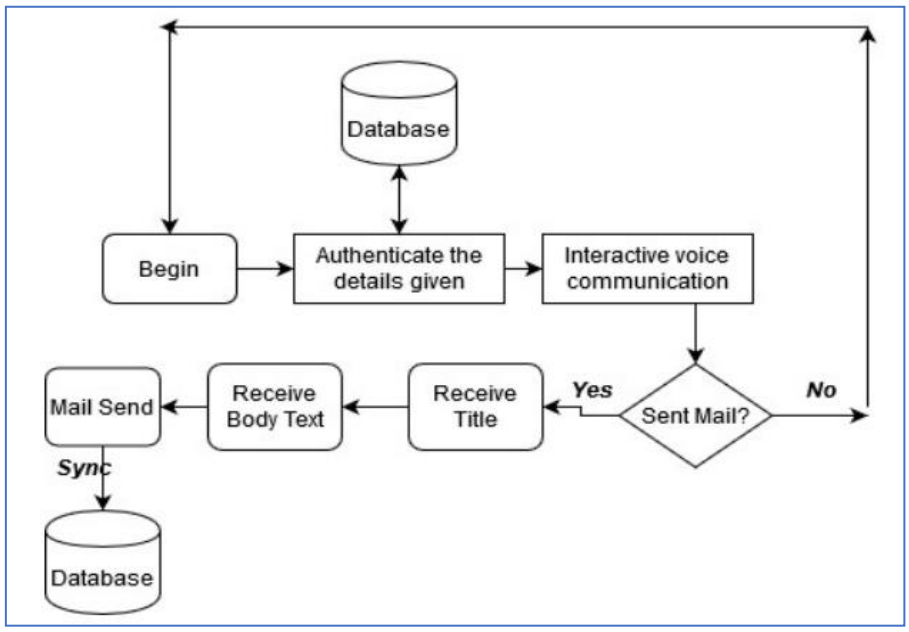


Figure 1: System Architecture

4. Results and Discussion:

4.1 User Authentication

Any user who needs to use the system ought to first register to get a username and password. This module can collect complete information from the user. The details that the system can once more ensure by prompting alphabetically.

4.2 Speech-to-Text

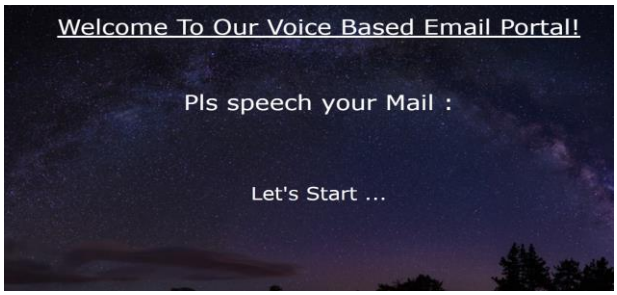
Speech-to- Text technique helps to obtain input for the system. When a person speaks through the microphone and is recognized by the system, the speech is then converted to text. Our speech-to-text system directly converts speech to text.

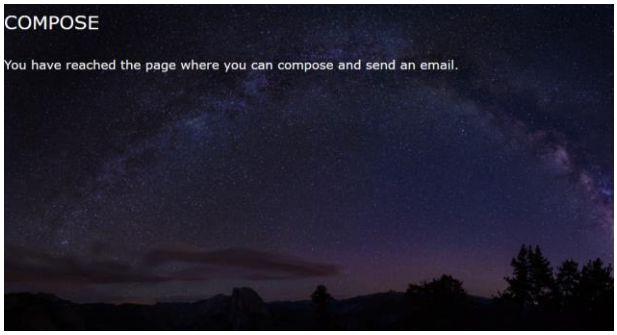
4.3 Conversion of Text-to-Speech

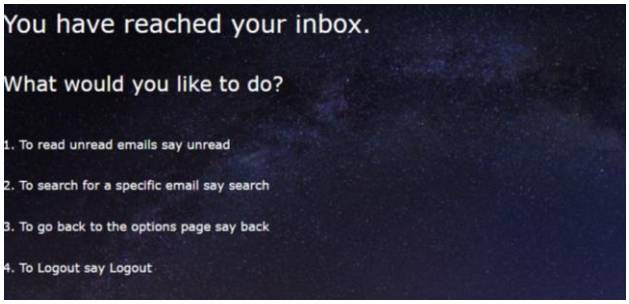
Text-to-speech converter helps in obtaining output from the system. This text is converted into speech format because text format is useless for visually impaired people.

4.4 Processing for Natural Language

In Processing for Natural Language module, first text is divided into tokens. The token-to-word transformation creates the writing kind of token.







5. Conclusion:

This project builds confidence and the user becomes independent as they do not need the help of others for sending an email. These voice-based e-mail systems can also be used by illiterate, physical and visually challenged people as the TTS and STT technologies benefit them. This system overcomes many drawbacks that were faced by visually challenged people such as sending and receiving emails as it does not contain any protocols, easy to access and highly secured.

6. Future Work:

6.1 In future work, we can enhance algorithms to support speech recognition of diverse cultural aspects. Doing so well enable precise identification and swift transcription of the spoken word.

6.2 We can implement for various languages that can easily accessible for people by using new and primitive algorithms to identify the speech accurately and convert them into text promptly.

6.3 We can implement with various features like attaching documents etc.

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