



VOICE BASED EMAIL FOR IMPAIRED PEOPLE

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Abstract: In today's world communication has become very easy due to integration of communication technologies with internet. Focusing and addressing the problems faced by the differently abled people such as visually, audibly and vocally challenged is a tough job. A lot of research has been done on each problem and solutions have been proposed separately but not all of them are addressed together. The main purpose of this project is to make the differently abled people feel independent confident by seeing, hearing and talking for them. This project aims at developing an email system that will help for impaired person to use the services for communication without previous training. The system does not require the use of keyboard and mouse. This system can also be used by any normal person, for instance someone who is abled.

Keywords: blind, deaf, hearing.

I. INTRODUCTION

A survey shows that there are more than 250 million people are facing challenges around the globe. That is, around 250 million people are unaware of how to use Internet or E-mail. The only way by which a visually impaired person can send an E-mail is, they have to dictate the entire content of the mail to a third person(not challenged) and then the third person will compose the mail and send on the behalf of the impaired person.

We have seen that the inception of Internet has dramatically revolutionized many fields. Internet has made life of people so easy that people today have access to any information they want sitting at their home. One of the main fields that Internet has revolutionized is communication. And talking about communication over Internet, the first thing that comes in our mind is E-mail. E-mails are considered to be the most reliable way of communication over Internet, for sending or receiving some important information. But there is a special criteria for humans to access the Internet and the criteria is you must be able to see. You must be thinking that what sort of criteria is this, every one with eyes can see. But there are also specially able people in our society who are not gifted with what you have. Yes there are some visually challenged people or blind people who can not see things and thus can not see the computer screen or keyboard.

II. LITERATURE SURVEY

Literature Survey is the most important step in software development process. Before developing the tool or application, it is necessary to determine the time factor, economy and strength. Once these things are satisfied, the next steps is to determine which operating system and language can be used for developing the tool. Once the programmers start building the tool the programmers need lot of external support. This support can be obtained from senior programmers, from book or from websites. Before building the system the above consideration are taken into account for developing the proposed system.

Providing assistance for individuals with disabilities, particularly those with visual, auditory, or speech impairments, can be a complex challenge that cannot be addressed by a single technology alone. The main objective of this project is to offer an all-in-one device that is user-friendly, efficient, accurate, and cost-effective[1].

The aim of the project is to create a single device solution in such a way that is simple, fast, accurate and cost-effective. The main purpose of the device is to make the differently abled people, feel independent confident by seeing, hearing and talking for them[2]. The paper provides a Google API and Raspberry Pi based aid for the blind, deaf and dumb people. The vocally impaired are aided by taking the input by the user as text through the built-in customized on-screen keyboard where the text is identified, text into speech conversion is done and the speaker gives the speech output.



Today, sending private information requires the use of email. Email is a form of technology that helps with corporate communication as well as allowing users to send mail to others. The major goal is to create a voice-based email system for those who are blind or visually impaired, allowing them to send and receive emails using computers. It will use the latest features to provide an environment which is helpful for the visually challenged people to work without the need for an external help[3].

E-mail is One of the most popular forms of communication method. Utilizing a speech recognition model helps identify user languages and voices. It allows spoken words to be accurately transcribed into written text, enabling users to interact with their emails using voice commands. The procedure of transferring spoken speech into text is commonly called "speech-to-text" or "automatic speech recognition" (ASR). Google Text-to-Speech (GTTS) technology turns the text that has been inputted into speech[4].

III. PROPOSED SYSTEM

The millions of people are facing the challenges I communicating with email due to disabilities such as blindness, deafness and muteness. The references models are based on IOT and AI.

METHODOLOGY:

The proposed system is that voice based email system which is web based application that allows impaired 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.

As the input to the system does not use keyboard or mouse users can easily give input by speaking the messages. This approach can be used as a general way to help people suffering from any of these three disabilities communicate and feel like a part of the world.

TEXT MODULE:

pyttsx3 is a text-to-speech conversion library, written in Python. It works offline, unlike other libraries, and is Python 2 and 3 compatible. An application uses the pyttsx3.init() factory method to get a reference to a pyttsx3. Engine instance. The text module in a voice-based email for impaired people is a crucial component. It allows individuals to compose and read emails using text instead of relying solely on voice input and output.

This feature enhances accessibility and inclusivity by catering to individuals who may have difficulty with speech or hearing. It supports multiple languages, making it adaptable to different users' needs. The text module utilizes speech-to-text technology to convert spoken words into written text, enabling users to communicate effectively through email. It's a fantastic way to empower individuals with disabilities and ensure equal access to communication tools.

SPEECH MODULE:

Speech Recognition uses a combination of computer science and linguistics to recognize spoken words and convert them to text.

The uttered words can then be converted to text, a query can be made, and a response can be given using Python's speech recognition. Some devices can even be programmed to respond to spoken speech.

IV. FLOW CHART

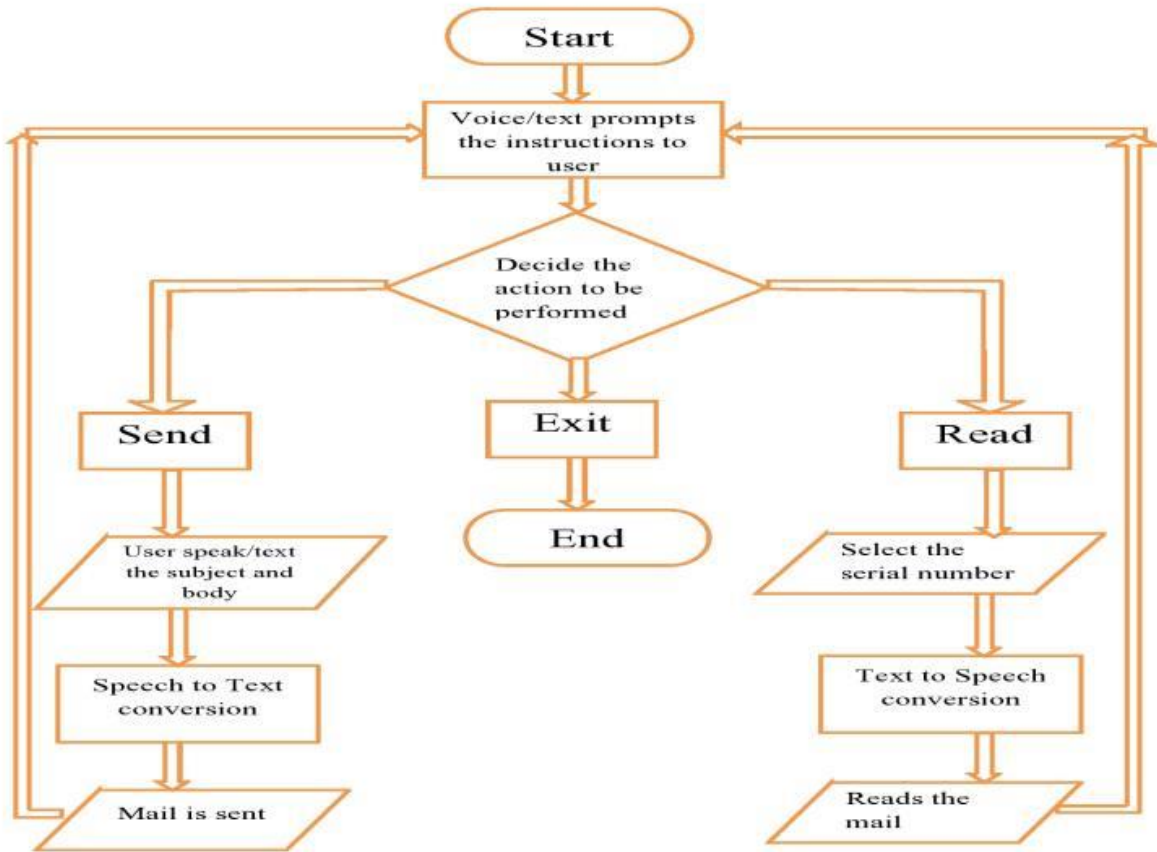
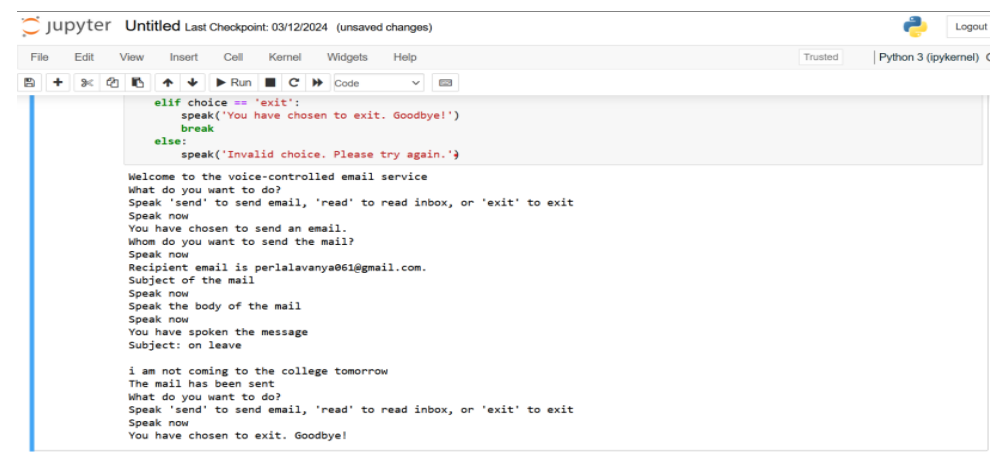


Fig: Flowchart for voice based Email

V. RESULT & ANALYSIS

- Step 1: The system asks us what you want to do
- Step 2: Based on the user requirement it performs the action like send, read and exit.



```
elif choice == 'exit':
    speak('You have chosen to exit. Goodbye!')
    break
else:
    speak('Invalid choice. Please try again.')
```

Welcome to the voice-controlled email service
What do you want to do?
Speak 'send' to send email, 'read' to read inbox, or 'exit' to exit
Speak now
You have chosen to send an email.
Whom do you want to send the mail?
Speak now
Recipient email is perlalavanya061@gmail.com.
Subject of the mail
Speak now
Speak the body of the mail
Speak now
You have spoken the message
Subject: on leave

i am not coming to the college tomorrow
The mail has been sent
What do you want to do?
Speak 'send' to send email, 'read' to read inbox, or 'exit' to exit
Speak now
You have chosen to exit. Goodbye!

Fig: Voice based Email for impaired people for sending

**VI. CONCLUSION**

This project enables with the impaired people to participate in the development of digital India and to communicate more easily through the internet and in people's lives. When you see how to send and receive an email, this technique removes many of the limitations that the people have. The developers may be influenced by the project's success, motivating them to produce helpful items that can assist persons with these impairments.

VII. FUTURE SCOPE

Since this application is just a prototype, there is no integration with the web. We hope to achieve same in future for real-time purposes. This project has a wide scope as many enhancements can be done in this system. It can include the functionality of reading the mails with serial numbers. It can also include the functionality of accessing the mail body in different ways. In this manner we can interpret that the system will have a great scope in the future.

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