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VOICE BASED EMAIL SYSTEM FOR BLIND PEOPLE

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ABSTRACT

One of the most extensively utilised modes of communication is email. In today's world, emails are used to convey sensitive and time-sensitive information there are around 253 million individuals worldwide who are blind or visually impaired. Communication is a challenge for many visually challenged individuals. Because technology is advancing at a rapid pace, persons who are visually impaired see themselves to be more challenged than ever before. The most crucial consideration in building this system is accessibility. Only when both able and disabled individuals can utilize a system is it considered accessible. The suggested project intends to create an email system that would allow even inexperienced visually impaired people to use communication services without prior training. The user will not be able to use the keyboard, instead relying solely on mouse operation and speech to-text conversion. It can be utilized by a non-blind individual who is having problems reading. The technology is entirely dependent on interactive voice response, making it extremely user-friendly.

1. INTRODUCTION

Technology is advancing at a rapid pace, making people's lives easier by allowing them to complete most tasks in less time and with more accuracy and efficiency. Communication is one of the professions that has advanced to the next level due to technological advancements and the availability of the Internet. Distance has become such a minor factor in communication as a result of technological advancements. Email is one of the most reliable methods for exchanging critical information, and it is also utilized globally; However, a person must be able to see in order to use the internet. Millions of individuals who are blind or visually impaired are unable to use the internet because they are unable to see the screen or keypad. In this way, they are very far away from email communication and internet world The current email system is

inaccessible to these blind persons. they are unable to send and receive emails, as well as read the material shared by email; As a result, they are unable to use existing systems. To access the internet, a person must be able to read what is printed on the screen, rendering internet technology worthless for visually impaired persons. A visually impaired person can only send an E-mail if they offer a third party the whole content of the message so that the third party may prepare and send the message on their behalf. This method, however, does not result in a solution to the problem. Finding a third person is not always possible for a visually impaired individual, and sometimes the content is personal in order to retain the specifications' integrity. As a result, in order to assist these people and build society, authors devised this concept, which allows a visually impaired person to send and receive emails using voice commands rather than a keyboard or a visual device.

2. LITERATURE SURVEY

The literature survey on "Voice-Based Email for the Blind" presents various studies and approaches to developing voice-based email systems to improve email accessibility for visually impaired individuals. Here's a brief summary of the key findings from the surveyed literature:

Pranjal Ingle et al. (2016): The study utilizes three essential technologies: Speechto-Text (STT) for converting speech to text, Text-to-Speech (TTS) for converting text to speech, and Interactive Voice Response (IVR) for user interaction. Disadvantages include the requirement of high-sensitive microphones, which may not be readily available to all users.

Divesh Jethani et al. (2018): Introduces a voice-based system with multi-lingual capabilities and a user-friendly GUI. Enables users to send, receive, read, and delete emails, but it may require mouse clicks in some parts of the application.

Parkhi Bhardwaj et al. (2016): Incorporates extra speech recognition technology along with other converters and IVR for email access. The system offers more features than existing graphical user interfaces (GUI) and is designed to be accessible to various user groups, including handicapped and illiterate individuals.

3. SYSTEM DESIGN

Software design sits at the technical kernel of the software engineering process and is applied regardless of the development paradigm and area of application. Design is the first step in the development phase for any engineered product or system. The designer's goal is to produce a model or representation of an entity that will later be built. Beginning, once system requirement have been specified and analyzed, system design is the first of the three technical activities -design, code and test that is required to build and verify software. The importance can be stated with a single word "Quality". Design is the place where quality is fostered in software development. Design provides us with representations of software that can assess for quality. Design is the only way that we can accurately translate a customer's view into a finished software product or system. Software design serves as a foundation for all the software engineering steps that follow. Without a strong design we risk building an unstable system – one that will be difficult to test, one whose quality cannot be assessed until the last stage. The purpose of the design phase is to plan a solution of the problem specified by the requirement document.

This phase is the first step in moving from the problem domain to the solution domain. In other words, starting with what is needed, design takes us toward how to satisfy the needs. The design of a system is perhaps the most critical factor affection the quality of the software; it has a major impact on the later phase, particularly testing, maintenance. The output of this phase is the design document. This document is similar to a blueprint for the solution and is used later during implementation, testing and maintenance.

The design activity is often divided into two separate phases System Design and Detailed Design. System Design also called top-level design aims to identify the modules that should be in the system, the specifications of these modules, and how they interact with each other to produce the desired results. At the end of the system design all the major data structures, file formats, output formats, and the major modules in the system and their specifications are decided. 6 During, Detailed Design, the internal logic of each of the modules specified in system design is decided. During this phase, the details of the data of a module is usually specified in a high-level design description language, which is independent of the target language in which the software will eventually be implemented. In system design the focus is on identifying the modules, whereas during

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detailed design the focus is on designing the logic for each of the modules. In other works, in system design the attention is on what components are needed, while in detailed design how the components can be implemented in software is the issue.

Design is concerned with identifying software components specifying relationships among components. Specifying software structure and providing blue print for the document phase. Modularity is one of the desirable properties of large systems. It implies that the system is divided into several parts. In such a manner, the interaction between parts is minimal clearly specified. During the system design activities, Developers bridge the gap between the requirements specification, produced during requirements elicitation and analysis, and the system that is delivered to the user. Design is the place where the quality is fostered in development. Software design is a process through which requirements are translated into a representation of software. .In other works, in system design the attention is on what components are needed, while in detailed design how the components can be implemented in software is the issue. Design is concerned with identifying software components specifying relationships among components. Specifying software structure and providing blue print for the document phase. Modularity is one of the desirable properties of large systems. It implies that the system is divided into several parts. In such a manner, the interaction between parts is minimal clearly specified.

3.1 SYSTEM ARCHITECTURE

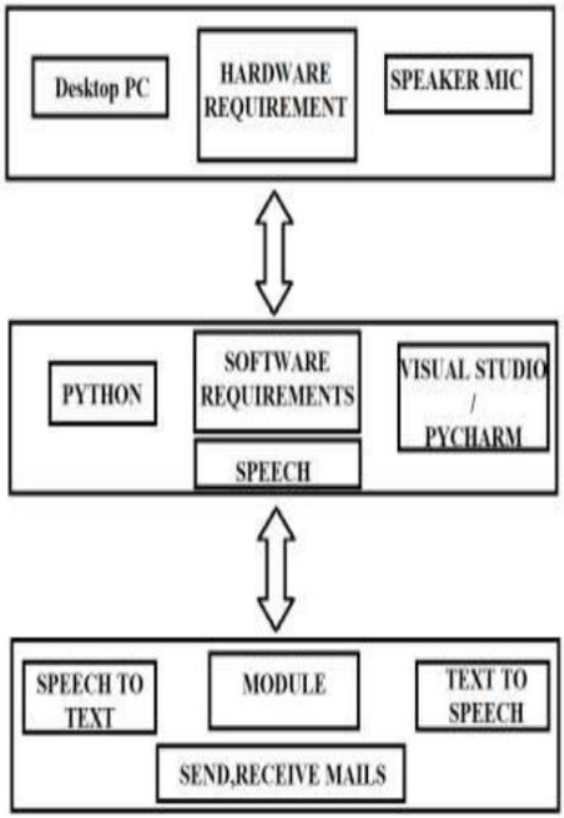

Figure no.3.1 system design

3.2 ACTIVITY DIAGRAM

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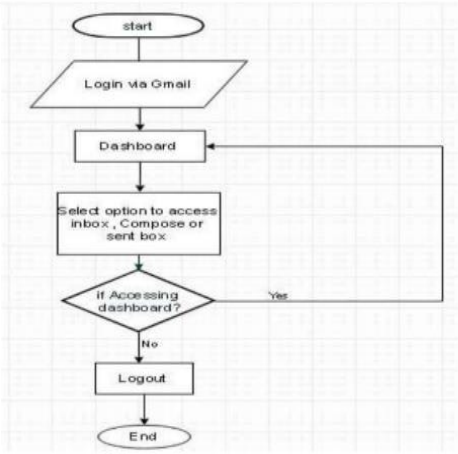
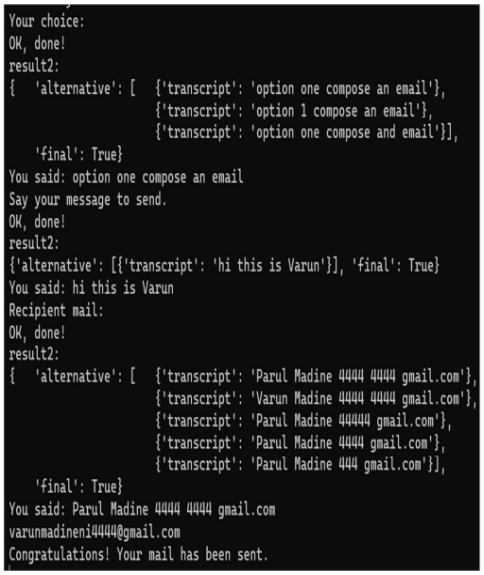


Figure no.3.2 activity diagram

4. OUTPUT SCREENS

4.1 Login Page:

4.2 Home Page:



8.3 Output Screen:

5.CONCLUSION

The proposed system aims to provide a solution for visually impaired individuals to access email services effectively. This system overcomes the challenges faced by visually impaired individuals in accessing email. Users can interact with the system by providing voice inputs, making it accessible and user-friendly for those who cannot use traditional visual and keyboard interfaces. Email communication is an essential part of modern life, but it can be challenging for visually impaired individuals. This voice-based email system offers a valuable solution. By using voice commands, visually impaired users can compose, send, and read emails, making it a significant improvement in their accessibility to this critical form of communication. The proposed system leverages voice input to empower visually impaired individuals to use email services, thereby enhancing their independence and access to professional and personal communication. Email communication is an essential part of modern life, but it can be challenging for visually impaired individuals. This voice-based email system offers a valuable solution. By using voice commands, visually impaired users can compose, send, and read emails. This voice-based email system offers a valuable solution. By using voice commands, visually impaired users can compose, send, and read emails, making it a significant improvement in their accessibility to this critical form of communication.

6. FUTURE ENHANCEMENT

The future of the voice-based email system for visually impaired individuals is promising, with the potential to make email communication even more accessible and user-friendly, ultimately enhancing the independence and quality of life for visually impaired users. 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

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