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Voice based E-mail forthe Visually Impaired

Shubham Dakhare[1], Nakul Patil[2], Devashish Bisen[3], Dhanashri Shinde[4], Mrs. Surbhi Khare[5]
[5] *Assistant Professor, Departmentof Information Technology, Priyadarshini College of Engineering, Hingana, Nagpur, India*

Abstract: ***One of the most popular methods for people to interact with one another is via email. Today, a significant quantity of urgent and confidential information is sent via email. People are getting closer to a digital existence and a digital communication as technology advances. In this new advanced era, there are many methods to communicate with others online. The majority of them choose email conversation as the most effective form of communication. (Email). Email is the technology that enables users to communicate with others by writing emails and also aids in business-related communication. Their square measure, however, is unable to use these technologies because they are illiterate or unable to look at a computer. So, writers developed this technology to be more accessible to people who are blind.***
Keywords: Speech recognition, text-to-speech, voice mail, and people with visual impairments.

I. NTRODUCTION

Since technology is advancing so quickly and is improving people's quality of life, we can conclude that all business can be conducted for a considerable amount of time with high accuracy and effectiveness. With the advancement of technology, the connections already existing in the areas have reached a new level. Nowadays, distance is only a marginal distribution of communication because the Internet has made it so simple for everyone to interact. [9] When considering how we can communicate with them online, email is the first method that springs to mind. Use of the mail, which is regarded as the most trustworthy method of sending and receiving essential information, is widespread.

It's a common misconception that you need to be able to comprehend computer print in order to access the Internet. This is untrue, and people with poor vision have no use for Internet technology. There is only one method for someone who is blind to send you an email, and that is to give the entire email address to a third party who will then be ready tosend the email on their behalf while also protecting their copyright. However, this strategy has forced us to find a solution to this issue. A third party could be found to assist a person with visual impairments, and the material may occasionally be personalised to maintain the goods' integrity. As a result, in order to aid the populace and advance society, the author developed an idea that allows someone with vision impairments to begin an email by simply speaking their desired content; they are not dependent on any visual aids.

A. Speech Recognition using Artificial Intelligence

Artificial intelligence (AI) is a technology that helps intelligent management systems build machines that behave like humans and mimic their intelligence. Applications of AI include computer recognition, natural language processing (NLP), and other areas like these. Deep learning and natural language processing ideas are used to comprehend and analyse human languages, including English and many others, by extracting metadata, keywords, sentiments, and attitudes.

II. LITERATURE SURVEY

We present a thorough analysis of the literature on the relevant technical issues in this part. It is suggested that voice of the architectural email that it makes email more accessible to impaired people. The current system is not blind because it does not provide a reliable assessment of how well its material has been read. The suggested method makes use of mouse clicks, interactive voice response, and speech recognition. Additionally, the device is used to authenticate the user for additional protection. The system will record the first module. All user information will be gathered by this module, which will also instruct users on what data to input. The user is prompted to submit a user name and password in the second module, which is known as the login module. Use voice commands to assist you with this You will require more tests and speech in order to complete the voice of the check. Once registration is complete, the user is then taken to the inbox screen. The user can use the mail system normally once they have signed in. System Preferences: How To Create An Email Account: It's Waste of Time. Voice commands can be used to move between them for the user. In contrast to the pre-existing email system, the suggests a system that is built on a system with a voice command. In effect, the entire system is built around text to number conversion.

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Once activated, the system will ask the user to speak instructions in order to access the necessary services. It is important to specify that this command will function if the user wishes to access the pertinent services. This application utilises IMAP. (Internet Message Access Protocol). This is a common Internet technique that email clients use when sending emails from mail servers over TCP/IP. The first screen presented at the start of the year will be the primary activity type, the screen. The system will begin to accept your voice instructions after the user presses just one button on this screen. It is a singular, full-size button that can be tapped anywhere on the screen. The user can then submit an email to read it with the aid of voice commands.

The system makes use of three primary technologies:

1) Number Conversion to Text.
2) Text-to-speech.
3) Interactive Voice Response.

The website requires voice commands to register you when you view it for the first time. Additionally, the user's audio data and a note will be stored in the database once you register. In such a system, the user will obtain a user ID and password after logging in to receive an email. With the aid ofAdobe Dreamweaver CS3, the user interface was created. The idea of efficacy and efficiency is the main focus of the website. There is also a "Contacts" page where the user can ask for assistance or give any suggestions.

A suggested electronic system at the time is user- friendly for blind people. The Viterbi method, text-to-speech conversion, and voice-to-text conversion are all options. Thealgorithmic rule, which uses technology, does not think it is the most suitable word; however, as soon as the user says it, it is spoken for a given situation as the word you predicted. At the website where they are visiting for the first time, the individual registers. Some of the drawbacks of the present system will be lessened by this system. Regrettably, the effectiveness of this method for using the Viterbi algorithm to decrease errors will decrease and more room will be needed.

To enhance their interaction with the email system, a system for the blind and illiterate is suggested. With the helpof this system, screen readers and Braille devices used in IVR systems are no longer necessary. We used the text-to- speech and speech-to-text conversions there. There are otheruses for voice instructions as well.

You can register using your name, your email address, and your password. This allows you to use the method that instructs PHP to send an email. You can use the library to transmit emails from this location. in order to retrieve the user's messages from the IMAP server. To look for email gathering boxes, this Lash-Morris-Pratt algorithm is used. As a result, the environment of the system is tidy, and vocal control is provided by a feedback system at each stage. I apologize, but this plan makes use of the Gmail host server to allow us to use other email systems, including Yahoo, Google, and others.

Proposed a voting system for the blind that is built on computers and mobile devices. They make up the majority of the system's functioning in the paragraph below.

a) System communications from Gmail, referencing thepurchaser's email.
b) Real simple syndication of data, or RSS
c) Let's take in some sound.
d) The system's red book and reader
e) Utilize the bridge's browsers to look for your discs.

It is a software architecture designed with the operating system's email and MMS messaging features easily accessible for blind users. With the aid of the keyboard as well as voice instructions and a mouse, thegraphical user interface design is possible. In addition to email, RSS feeds are used to disseminate news headlines andannouncements of new goods and services. RSS feeds are a form of simple syndication. For you, we have also created an application. Other apps can also be reached by voice command in addition to email.

To get around the favorability and convenience of email activities, the writers of suggest Tetra-Entry, a blind-friendlyemail client.

III. EXISTING SYSTEM

According to the statistical report on email, 2014-2018 developed by the technology research company, the market, and the Palo Alto, California, United States, which is based on the and only 4.1 million in the email address is created to have more than 5.2 billion users in 2014. But given that the invoice must be completed by the end of 2018, it is one of the most popular channels of contact.

Approximately 253 million people globally are blind or have vision problems, according to studies by the Vision Loss Expert Group (VLEG), which means that most of these individuals do not know how to use the Internet or email.

The current system is basically a software programme that enables the management of web service users as well as the incorporation of email's benefits. Your email address is a popular method of contact. Unfortunately, the current system does not allow voice commands or a sound system, making it inappropriate for those with poor vision.

You will also get an SMS notification asking the user to retrieve the relevant file from the server in a format that iseasier for search engines to understand. To demonstrate to them in the text that the answer is not unattainable but rather for those who may, in certain circumstances.

Even though the current browser can playback audio and video files, users must first make a text-based query in order to allow users to playback audio and video files using a graphical user interface(GUI).

The systems that are currently being developed vary significantly from the system's output in that they use email to represent what might be the existence of only a blind.

IV. PROPOSED SYSTEM

The suggested method will be accessible to those with poor vision via email and will benefit the neighbourhood. The authors claimed that anyone who is currently a part of this method will find it simple. It is said that a detailed application is ineffective and completely accessible wherever it is used in human vision.

As a critic of the present system, they would rather have features that made the system easier to use for traditional users, with special attention paid to the needs ofthe visually impaired and traditional users in Africa.

For the use of the services, this method requires a certain action from the user, and if the user has access to a number of services, they will also need to take this action. The user will first fill out the enrollment form to sign up for the application. The user must be filled out completely using voice commands and all necessary fields before being scanned in from the website; as soon as the user starts speaking, an automatic recording will begin.

The system will prompt the user for a user name and password after the user logs in, translating the audio into text, and the user will then be verified by verifying the database credentials. After a successful test, you can ask the users in the various areas to record your sent and received messages.

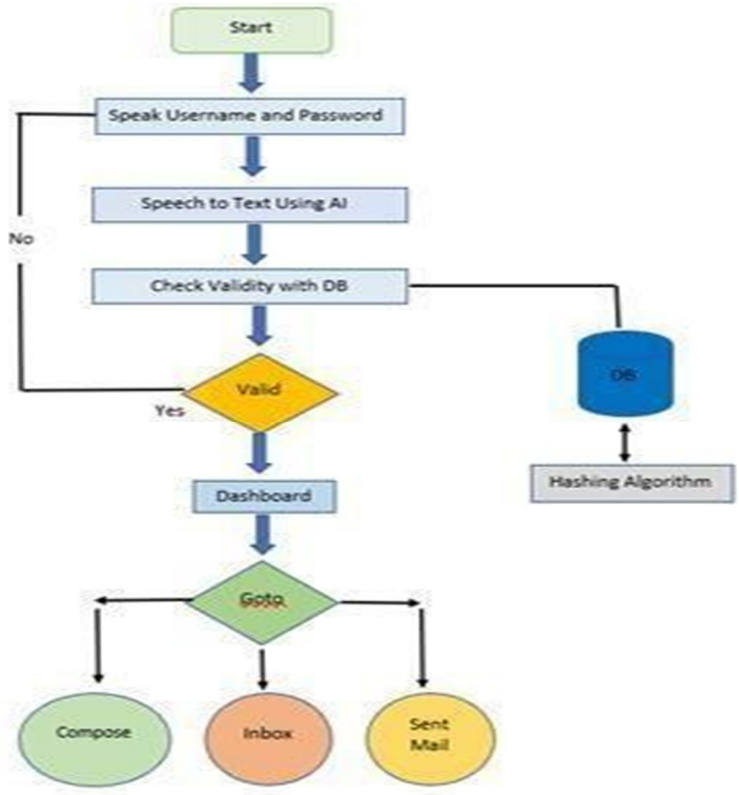


Fig.1. User login and accessing system flowchart

Blind people who use the voice-activated programme can send and receive emails rapidly. translates the user's spoken voice into writing, speaks the text, and then takes action.

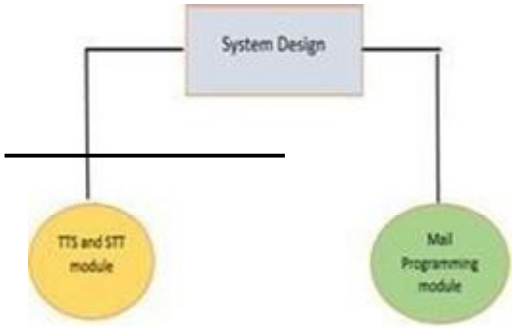


Fig 2. System Design Modules

V. DESIGN OF PROPOSED SYSTEM

These projects fall in love with to break it up, and thefollowing is made in three simple steps.

A. User interface design

In this part, the user interface or project user interface will beupgraded. The first point of interaction with the user via the software programme is the design of a web page with whicha user can interact. Front-end technologies are utilised in the creation of the user experience.

Receiving Email**:** At a specified time, the server's user agentchecks the mailboxes. The user is instantly notified if any data is found during this time. Additionally, when a user receives an email, it is checked for specific details like the subject line.

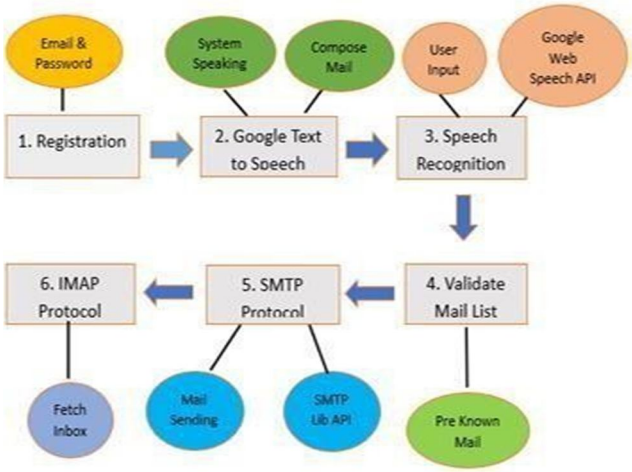
B. Database

Because it handles all storage-related data and references, a database is essential to any project. Additionally, it is a database that typically contains the users, authentication, and environment security of any email user. As a result, a database was made as part of the design and databases to keep emails.

C. The Design of the System is that the system is going to consist of all of the Modules

The module of your choice (Text-to-Speech), and the SINGLE-unit (Speech to Text), Item-oriented programming module (how to Create an Email Account, and the Saint- Mail).

Process**:**



D. Mail Programming Module

Today, email is the most important tool offered online. Internet applications can transmit email addresses to other users thanks to the SMTP protocol. Email is received from the client-side using POP (post office protocol) and IMAP (Internet message access protocol), and is sent using SMTP.

Email transmission: A forwarded email will have a header and a content. A series of replies to email requests is queued up by the customer and server prior to sending an email. The difference between the two is that the headerwill end when there is a null row. The body of the communication contains the precise information that was browsed for receipt. In the body, one data point is gathered after the other. As a result, the precise information searched for receipt is contained in the message's body. Each data is collected after the body's null line.

VI. EXPERIMENTAL SETUP

A. Speech-to-Text-with-artificial intelligence

The Google Cloud Speech-to-Text software developersoffer a light, user-friendly API for strong, current, and neuralnetwork models to switch off the sound and text. The API supports a worldwide user base and is accessible in 120 different languages. You have a lot of options for changing the transcript of the centre's judgment, including how you speak and how it sounds. Unfortunately, Google's machine learning techniques do a poor job of handling a regular stream or pre-recorded sounds.

B. Text to speech unification

This text-to-speech system is automated. To state that it's a text, this technique is very similar to a human verbalizer. TTS (text-to-speech) technology allows communication between you and portable computers. Here are some excellent illustrations of text-to-speech engines used for synthesis, processing, and main speech. The output control for music andaudio is typically triggered by the engine.

C. Structure of a text-to-speech unification system

The steps taken to produce the text synthesis are perceived as TTS and include reviews to change the tone, talk with an accent, and add prosody. Prosody is appropriate at that moment. It will reportedly be the one ring, based on the information that is presently on the market. The periodic structure's uniformity allows the synthesis to be broken down into its key components.

D. Processing of language processing

At the side of prosody, it generates a written text of thescanned text.

E. Digital Signal module processing

It converts representative data from information science into speech that can be heard and understood.

The following are the operations of the Processing of Natural Language module:

Text summary: Tokens are first created from the content. Not only the sort of token used for the notes, but also how to convert a token to a letter. If "the record is composed of the extension," an additional 11 "tokens, to be able to play in the wild," are added for a token of type "G," "1979" is changed to "ten, nine, eight, seventy-nine."

To apply the pronunciation rules: Apply the pronunciation rules, in which case the text of the analysis is finished. Because they are always parallel to one another, the letters cannot repeat from phoneme to phoneme because it does not suit. In some settings, characters that do not always match the sounds (such as "in", "is "learned," or phonemes (the "n" and "popular"). Additionally, much of this statement urges people to support human rights (the "ca"and "god").

The Prosody Generation: Prosody is first developed, and to alesser degree, in the UK. The level of the open system, basedon the language of the software's inflection-related factors (phrasing and accentuation), the model's amplitude, and the software's length, which includes the long sound and, as a result, the length of the residues that determine the language's length, units, time, and speaking).

VII. AUTHENTICATION AND SECURITY

Due to authentication, users are given account information like usernames and passwords, ensuring that they always have the correct information when they need to sign into the programme. As a result, this information needs to be kept in a database for reference in the future. We will implement the control system to the user in order to identify them.

A. Keeping a Password Straight may be Dangerous

Keeping a password straight can be risky, so make sure to teach them how to build a database table while also keeping the password straightforward. The server will be contacted when the user requests to register in so it can check the live load and store the username and password. The passcode kept in the database will then receive this information. The user will finally have access to the app if thegame is a hit.

Only passwords kept in plain text can be risky and will always be vulnerable to assault. Passwords are stolen by the government in cybercrime, and you can stop the account. However, one method of saving it is by transforming it into an unconvertible shape and a genuine password. This method is known as scrambling.

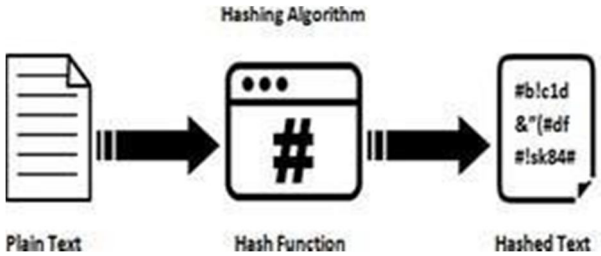
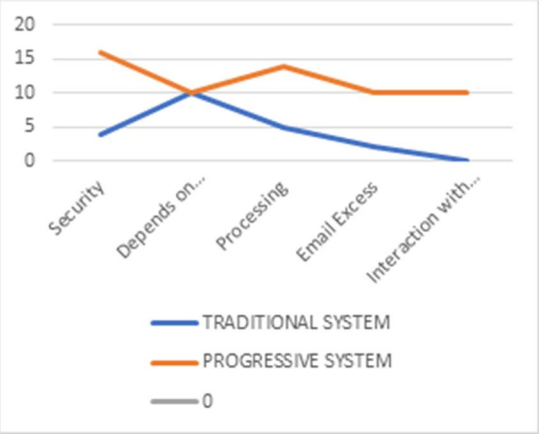


Fig.4 Hashing Algorithm

VIII. ANALYSIS OF COMPARISON ANDRESULT

SR. NO.	TRADITIONAL SYSTEM	PROGRESSIVE SYSTEM
1.	It is insecure in comparison to the progressive system.	It has high security, which makes it more trustable.
2.	The keyboard is mandatory in this system.	Because the system is based on IVR(Interactive Voice Response), a keyboard is not required.
3.	Time-consuming process(Slow execution).	It is more efficient and faster than a typical system.
4.	The only person without disabilities can use the system.	Both normal and disabled people can use the system.
5.	People who are blind are unable to engage with others or use the web-based email system.	The web-based email system will allow blind individuals to engage with it (using voice commands).

On ten scales, their parameters are taken in comparison.



IX. FUTURE SCOPE

Future improvements to this system have a lot of promise; perhaps it could be a system with email access and spam filtering capabilities in any language. Additionally, this system is very helpful for those with poor vision and can be upgraded to transmit an attachment. The system is straightforward and simple to use, and it can be made accessible to everyone in the area. It is also quite popular and will continue to be available in multiple languages. The system can also be incorporated to use sign language, which will increase its scalability and dependability.

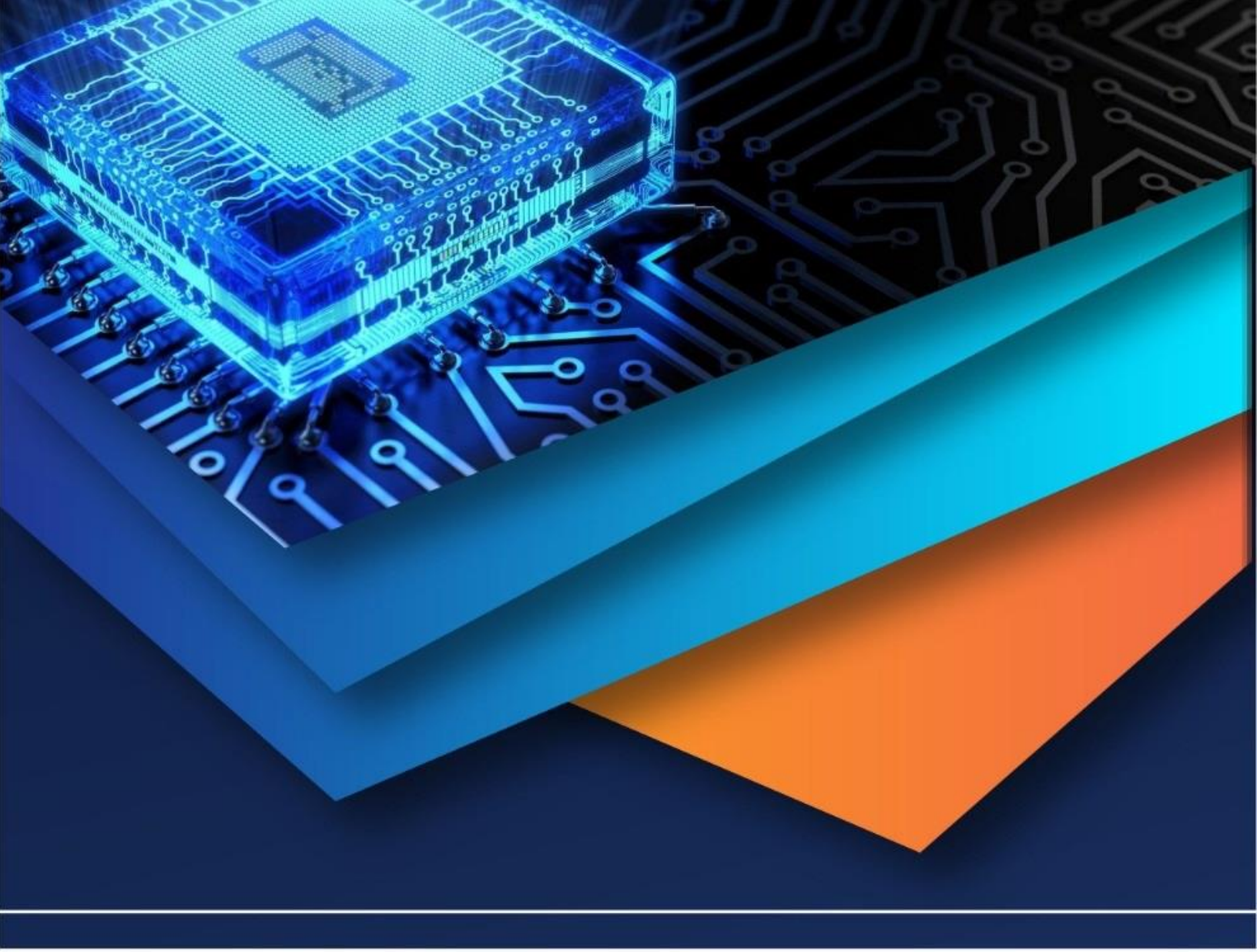
X. CONCLUSION

This paper contends that the development of a hamlet on the outskirts for those with disabilities will be beneficial to the neighborhood. Through this project, people with visual impairments are better able to contribute to the development of a digital India, making it simpler for them to communicate online and improve people's lives. When you see how to write and receive email, many of the drawbacks of the human system fall flat on your face. The developers may be influenced by the project's success and inspired to develop helpful goods that will benefit blind or low-vision users.

REFERENCES

[1] Guillermo Arturo Hernández Tapia, Ana Lilia ReyesHerrera . "E-mail management system for blind people in Spanish language". In Interacción'17: XVIII International Conference on Human Computer Interaction Cancun Mexico September, 2017.
[2] Jagtap Nilesh, Pawan Alai, Chavhan Swapnil, and Bendre M.R."VoiceiBased System in Desktop and Mobile Devices for Blind People". In International Journal of Emerging Technology and Advanced Engineering (IJETAE), i2014 ion Pages 404-407.
[3] Payal Dudhbale J. S.Wankhade, P. S. Narawade."Voice-Based System in Desktop and Mobile Devices for Blind People ". In International Journal of Scientific Research in Science and Technology, 2018.
[4] Ruchi Khedekar, Sonu Gupta, 2019, Voice based email System for Blinds, INTERNATIONAL JOURNALiOFiENGINEERING RESEARCH & TECHNOLOGY (IJERT) Volume 08, Issue 10 (October 2019).
[5] G. Shoba, G. Anusha, V.Jeevitha, R.Shanmathi."AN Interactive Email for Visually Impaired". In International Journal of Advanced Research in Computer and Communication Engineering (IJARCCE), 2014 on Pages 5089-5092 (Volume i3, Issue 1).
[6] Rijwan Khan, Pawan Kumar Sharma, Sumit Raj, Sushil Kr. Verma, Sparsh Katiyar. "Voice Based EMail System using Artificial Intelligence". International Journal of Engineering and Advanced Technology (IJEAT) ISSN: 2249– 8958, Volume-9 Issue-3, February, 2020.
[7] Runze Chen, Zhanhong Tian, Hailun Liu, Fang Zhao, Shuai Zhang, HaoboiLiu "Construction of a Voice Driven Life Assistant System for Visually Impaired People "International Conference on Artificial Intelligence and Big Data-" IEEE, 2018, PP 87-92, ISSN5386-6987.
[8] T. Shabana, A. Anam, A.Rafiya, K. Aisha, "Voice based Email System for Blinds", "IJARCCE", Jan 2015.
[9] Jayachandran, K., & Anbumani, P. (2017). Voice based email for blind people. Int. J. Adv. Res. Ideas Innov.Technol., 3(3), 1065-1071.
[10] Pathan, N., Bhoyar, N, Lakra, U., & Lilhare, D. (2019). V-Mail (Voice Based E-Mail Application).
[11] Sawant, S., Wani, A., Sagar, S.,Vanjari, R., & Dhage, M. R. (2018). Speech Based E-mail System for Blind and Illiterate People. International Research Journal of Engineering and Technology (IRJET) e-ISSN, 2395- 0056.
[12] Ummu hany sifa U, Nizar Banu PK, Voice Based Search Engine and Web page Reader". In International Journal of Computational Engineering Research (IJCER).Pages 1-5.
[13] G. Shoba, G. Anusha, V. Jeevitha, R. Shanmathi. "AN Interactive Email for Visually Impaired". In International Journal of Advanced Research in Computer and Communication Engineering (IJARCCE), 2014 on Pages 5089-5092.(Volume 3, Issue 1).

[14] T. Dasgupta and A. Basu. A speech enabled Indian language text to braille transliteration system. In Information and Communication Technologies and Development(ICTD), 2009 International Conference.
[15] R. Ghose, T. Dasgupta, and A. Basu. Architecture of a web browser for visually handicapped people. In Students' Technology Symposium (TechSym), 2010 IEEE, pages 325–329, April 2010.
[16] T. Lauwers, D. Dewey, N. Kalra, T. Stepleton, and M.B. Dias. Iterative design of a braille writing tutor to combat illiteracy. In Information and Communication Technologies and Development, 2007. ICTD 2007. International Conference ion, pages 1–8. IEEE,2007.
[17] Asakawa and T. Itoh: User interface of a home page reader. In ASSETS, 1998.
[18] S. Harper and N. Patel: Gist summaries for visually impaired surfers, In ASSETS'05: Proceedings of the i7thinternational ACM SIGCCESS conference ion Computers and accessibility, pages 90-97, 2005.
[19] M. Hori, G. Kondoh, K. Ono, S. Ichi Hirose, and S. Singhal: Annotation-based web content transcoding, In WWW, 2000.
[20] Huang and N. Sundaresan: A semantic transcoding system to adapt webservices for users with disabilities, In ASSETS, 2000.
[21] Ramakrishnan, A. Stent, and G. Yang, Hearsay: Enabling audio browsing ion hypertext content, in www, 2004.
[22] T. Raman, Audio system for technical reading: Ph.D. Thesis, Cornell University, 1994.
[23] J. T. Richards and iV. L. Hanson: Web accessibility, a broader view, In www, pages 72-79, 2004



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