Project report on

"Voice Based Email for Visually Impaired"

A Dissertation submitted in partial fulfilment of the requirement for the award of degree

MASTER OF COMPUTER APPLICATIONS

OF

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

By

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Under the Guidance of

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July-2024

BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

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CERTIFICATE

This is to certify that the dissertation titled "Voice Based Email for Visually Impaired" submitted in partial fulfilment of the requirements for the degree **"Master of Computer Applications"** by Visvesvaraya Technological University is based on an original study and is record of bonafide work carried out by PRAKRUTHI C bearing university registration number 1BY22MC058 during the period **April 2024 to July 2024** under our supervision and guidance and that no part of the report has been submitted for the award of any other Degree/ Diploma/ Fellowship or similar title or prizes. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the Master of Computer Applications Degree.

Signature of the Internal Guide	**Signature of the HOD**	**Signature of the Principal**
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2. ---------- **Signature**

DECLARATION

I PRAKRUTHI C, student of MCA, BMS Institute of Technology and Management, bearing USN 1BY22MC058 hereby declared that project entitled "Voice Based Email for Visually Impaired" has been carried out by me under the supervision of internal guide Dr. Aparna K and submitted in the partial fulfilment of the requirements for the award of Degree of Master of Computer Applications by the Visvesvaraya Technological University during the academic year 2023-24. This report has not been submitted to any other Organization/University for any award of degree or certificate.

Signature

Place: Bengaluru

Name: PRAKRUTHI C

Date:

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ACKNOWLEDGEMENT

I would like to express my deepest gratitude to all those who have supported and guided me throughout the development of this project. First and foremost, I extend my sincere thanks to my project guide Dr. Aparna K, for her invaluable insights, encouragement, and continuous support. Her expertise and guidance have been instrumental in shaping the direction and execution of this project. Her willingness to share knowledge and provide constructive feedback has significantly enhanced the quality of this work.

I am also profoundly grateful to my professors and faculty members at BMS Institute of Technology and Management, whose teachings and feedback have significantly contributed to my understanding and knowledge in the field of computer science and assistive technologies. Their dedication to education has inspired me throughout my studies. The learning environment they have fostered has been crucial to my academic growth and development.

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Department of MCA

VISION

To develop quality professionals in Computer Applications who can provide sustainable solutions to the societal and industrial needs.

MISSION

Facilitate effective learning environment through quality education, state-of-the-art facilities, and orientation towards research and entrepreneurial skills.

Programme Educational Objectives (PEOs)

PEO 1: Develop innovative IT applications to meet industrial and societal needs.

PEO 2: Adapt themselves to changing IT requirements through life-long learning.

PEO 3: Exhibit leadership skills and advance in their chosen career.

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Programme Outcomes (POs)

PO 1: Apply knowledge of computing fundamentals, computing specialization, mathematics and domain knowledge to provide IT solutions.

PO 2: Identify, analyse and solve IT problems using fundamental principles of mathematics and computing sciences.

PO 3: Design, Develop and evaluate software solutions to meet societal and environmental concerns.

PO 4: Conduct investigations of complex problems using research-based knowledge and methods to provide valid conclusions.

PO 5: Select and apply appropriate techniques and modern tools for complex computing activities.

PO 6: Understand professional ethics, cyber regulations and responsibilities.

PO 7: Involve in life-long learning for continual development as an IT professional.

PO 8: Apply and demonstrate computing and management principles to manage projects in multidisciplinary environments by involving in different roles.

PO 9: Comprehend & write effective reports and make quality presentations.

PO 10: Understand the impact of IT solutions on socio-environmental issues.

PO 11: Work collaboratively as a member or leader in multidisciplinary teams.

PO 12: Identify potential business opportunities and innovate to create value for the society and seize that opportunity.

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Course Outcomes (COs)

CO 1: Review the existing literature to identify and formulate the problem in contemporary technologies/ issues related to society/environment which leads to development of IT solution.

CO 2: Analyse the requirements and prepare Software requirement specifications (SRS) document as per IEEE format in consistency with the problem defined.

CO 3: Create models that are consistent with the requirements specified in the SRS.

CO 4: Develop the solution by applying appropriate techniques, software engineering and management principles and modern tools to meet the requirements either as an individual or by involving in team.

CO 5: Verify & validate the data and results to arrive at valid conclusions and communicate the work done effectively in terms of presentations, writing reports and research article as per the format given.

CO 6: Follow ethical principles in all stages of project work by avoiding plagiarism.

CO 7: Articulate the impact of IT solutions developed in the project work with respect to societal, environmental and industrial issues at large.

ABSTRACT

With the advent of technology, numerous solutions have been developed to aid the visually impaired in using computers effectively. One such innovative solution is the voice-based email system, a desktop application designed for visually impaired individuals to send and read emailsseamlessly. This system, built on the Python platform, incorporates 'text to speech' and voice recognition technologies to facilitate email communication. The application enables visually impaired users to interact with emails through auditory feedback, allowing them to perform taskslike composing, sending, and reading emails with ease. By leveraging these technologies, voice-based email system enhances digital accessibility, ensuring that visually impaired individuals canbenefit from the internet like everyone else.

Internet accessibility is a crucial aspect of modern life, offering vast amounts of knowledge andinformation. However, visually impaired people often encounter significant challenges when accessing textual content and online services. Traditional internet applications are typically designed with visual interfaces, making them difficult for visually impaired users to navigate. Recognizing this gap, computer-based accessible systems have emerged to provide alternative means of interaction. Tools such as screen readers have been instrumental in enabling visually impaired users to access online content. The Voice based email system builds upon these advancements, offering an efficient and user-friendly solution for email communication.

The Voice based email system architecture is specifically designed to cater to the needs of visually impaired users, ensuring they can access email functionalities easily. By integrating audio feedback and voice commands, the system provides a virtual environment that mimics thecapabilities of traditional email clients. Users can dictate emails, listen to incoming messages, and navigate their inbox using voice commands. This approach not only improves accessibility but also empowers visually impaired individuals to manage their digital communication independently. The development of such accessible systems underscores the importance of inclusivity in technology, striving to provide equal opportunities for all users in the digital age.

Keywords: Visually impaired, Voice-based email system, text to speech, voice recognition, internet accessibility, email communication, digital accessibility

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