## Echo

Voice Based Email App for the Blind

Group - 9

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## Agenda

Motivation

Problem Statement

Literature Review

Solution

Objective

Project Timeline

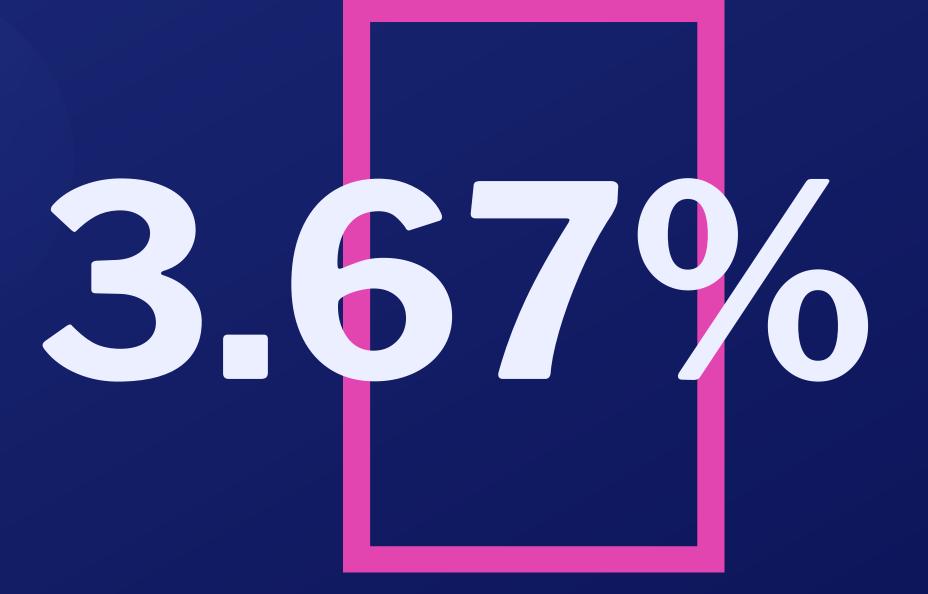
Challenges

## Motivation

- Improve email accessibility
- Providing an all-in-one user-friendly email solution.
- Improve the quality of life
- Reducing Social Isolation
- Universal accessibility for all users regardless of disability status.
- Leverages the latest advancements in NLP

## Problem Statement

- Challenges faced by blind people to access and use email.
- Email accessibility solutions often lack integration with popular email providers.
- Existing voice-based email solutions are either limited in functionality or not widely available.
- A new voice-based email solution is needed to address these challenges and improve email accessibility for people with visual impairments.



that is, about 284 million people are visual impaired.

## Solution

- voice-based email application that allows users to compose and read emails using voice commands
- Use NLP and STT technology to interpret the user's voice commands and generate text-based emails
- User can also listen to incoming emails with the help of text-to-speech technology

- Integrate with popular email providers to ensure access to existing email accounts
- User interface will be designed to be simple and intuitive, with large buttons and clear audio feedback.

Application will be available for both iOS and Android devices

## Literature Review

"A Survey of Automatic Speech Emotion Recognition: Tasks, Methods, and Datasets" by Wenqing Zhao, et al.

"Text-to-Speech Synthesis: A Review" by K. Sreenivasa Rao and K. Satya Prasad.

"Flutter: A Portable Framework for Building High-Performance Mobile Apps" by Eric Seidel, et al.

Yousif, S., Elyas, E., & Salih, M. (2019). A voice-based email system for the blind using natural language processing. Journal of Computing and Information Technology, 27(4), 185-194.

- Alapetite, A., Vermeulen, J., & de Graaf, M. (2015). Email access through voice for visually impaired and illiterate people. In International Conference on Computers Helping People with Special Needs (pp. 50-57). Springer.
- Singh, A., Mishra, S., & Goyal, A. (2021). Flutter for cross-platform mobile application development. International Journal of Recent Technology and Engineering, 9(3), 2083-2093.

#### **Existing solutions**

- Easy Voice Mail
- Gmail Voice
- HeyMail

- TalkMail
- Hound
- Voiceitt

## Objectives

- Develop a voice-based email application that allows users to send and receive emails using voice commands
- Design a user-friendly interface that is accessible to people with visual impairments and easy to navigate using voice commands
- Ensure the application meets the principles of universal design, promoting accessibility for all users regardless of disability status
- Test the application extensively to ensure its reliability, accuracy, and usability.

## Project Timeline

01

## Research and Planning

Involves gathering information, defining project objectives, and developing a detailed plan for the project.

02

## Learning and UI/UX Design

Learning the necessary skills and creating a user-friendly design for the app.

03

#### Development

Building the app's frontend and backend, integrating APIs, implementing voice commands, and enabling user authentication. 04

## Testing and Deployment

Conduct tests, fix bugs, and deploy the app to a production environment.

# Phase 1: Research and Planning 2 weeks

- O1 Conduct market research and user analysis
- **02** Define project scope and objectives
- Develop a detailed Software Requirements Specification (SRS) document

04 Develop the project plan

## Phase 2: Learning and UI/UX Design

#### 2 weeks

O1 Learn Flutter basics and Dart programming

Learn Flutter plugins for text-to-speech and speech-to-text conversions

O3 DevelopWireframesand mockups

Review and Refine the app design

# Phase 3: Development

6-8 weeks

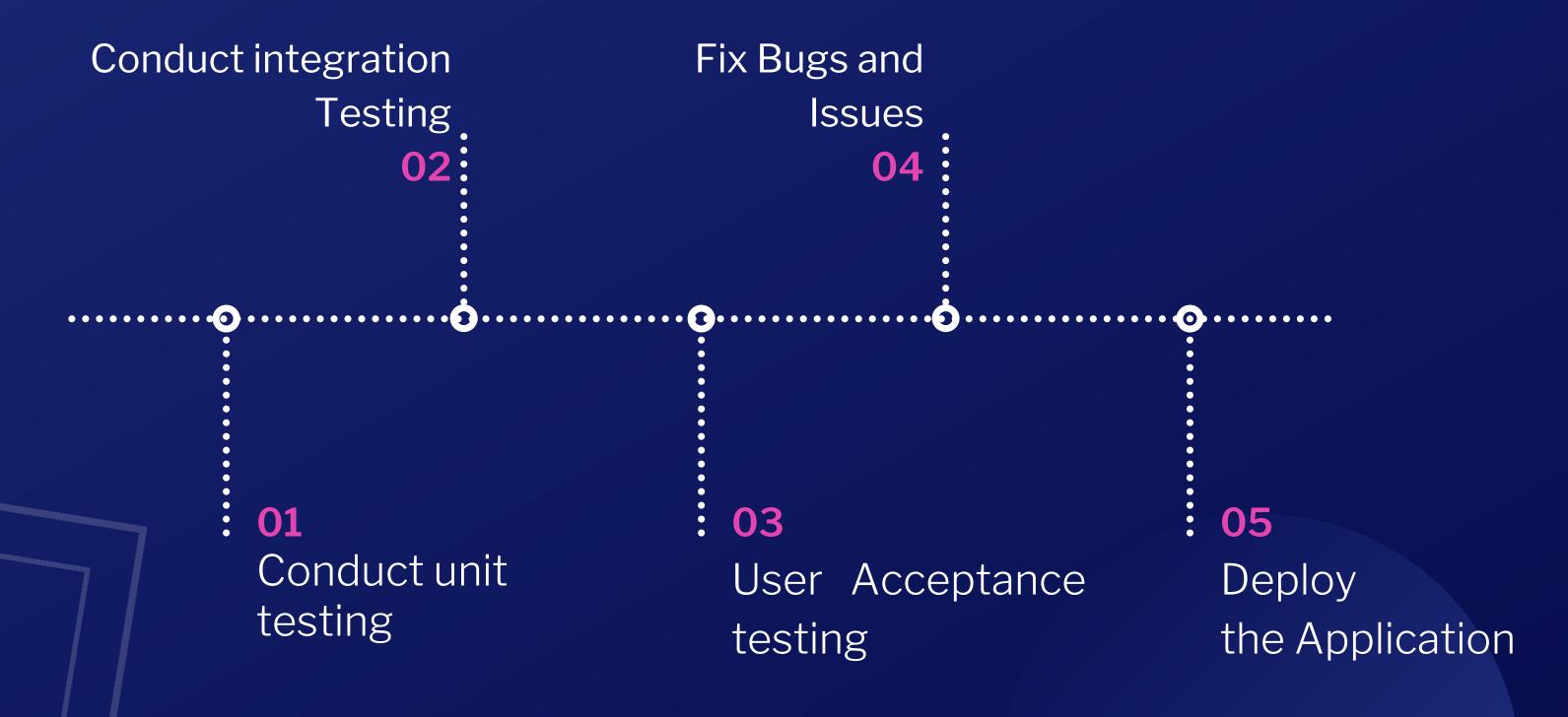
- O1 Develop the app's frontend and backend
- **02** Develop email retrieval functionality

03 Develop Basic email functionalities

O4 Develop user authentication functionality

### Phase 4: Testing and Deployment

#### 1-2 Weeks



## Challenges

- Privacy and security
- Voice recognition accuracy
- Including current email systems in the integration
- UX design
- User training
- Providing access to attachments

## THANK YOU