

# Blind and Deaf Helper App

Rushi Vekhande, Nilesh Dhumal, Siddhesh Ghagas, Nirbhay Manje

Vidyalankar Polytechnic, Mumbai, Maharashtra

**Abstract:** This project explores the integration of two powerful speech technologies: Text to Speech (TTS) and Speech to Text (STT). The TTS module converts written text into spoken words, enabling systems to read text aloud, which is essential for individuals with visual impairments or those who prefer auditory information delivery. On the other hand, the STT module allows for the conversion of spoken words into written text, facilitating hands-free interaction with digital systems and aiding individuals with physical disabilities or those who require voice commands for accessibility purposes

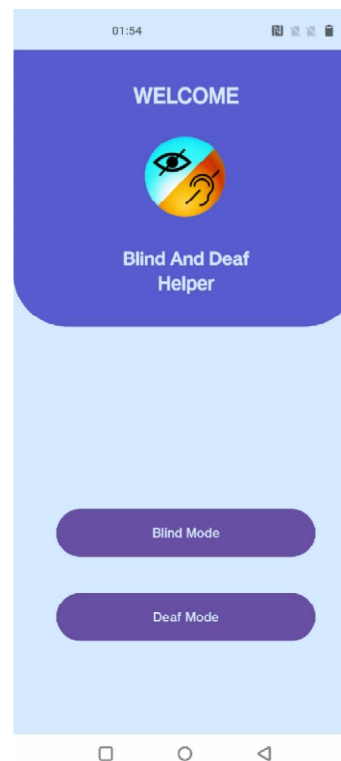
**Keywords:** Speech to Text

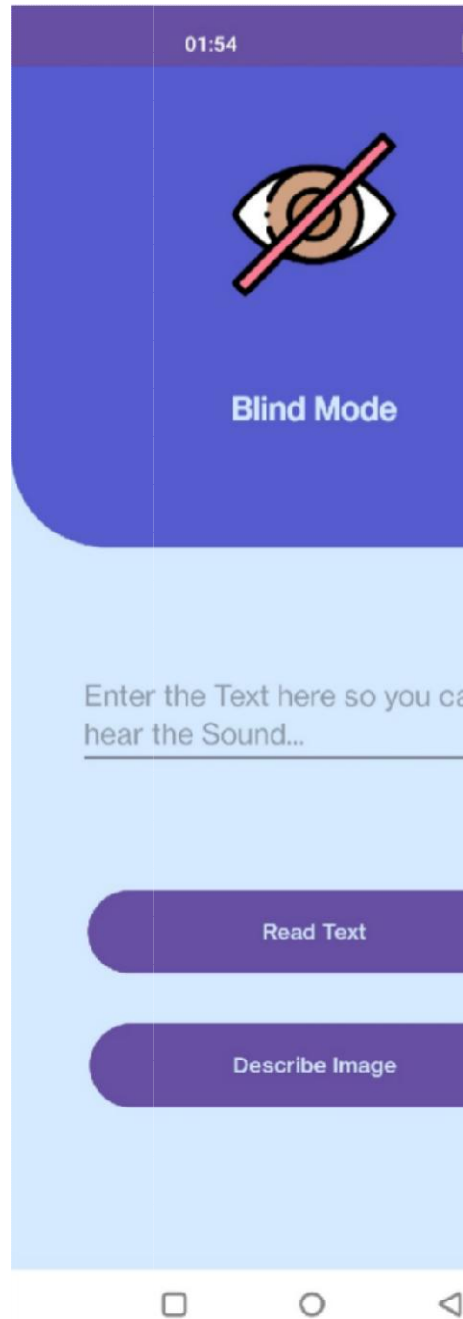
## I. INTRODUCTION

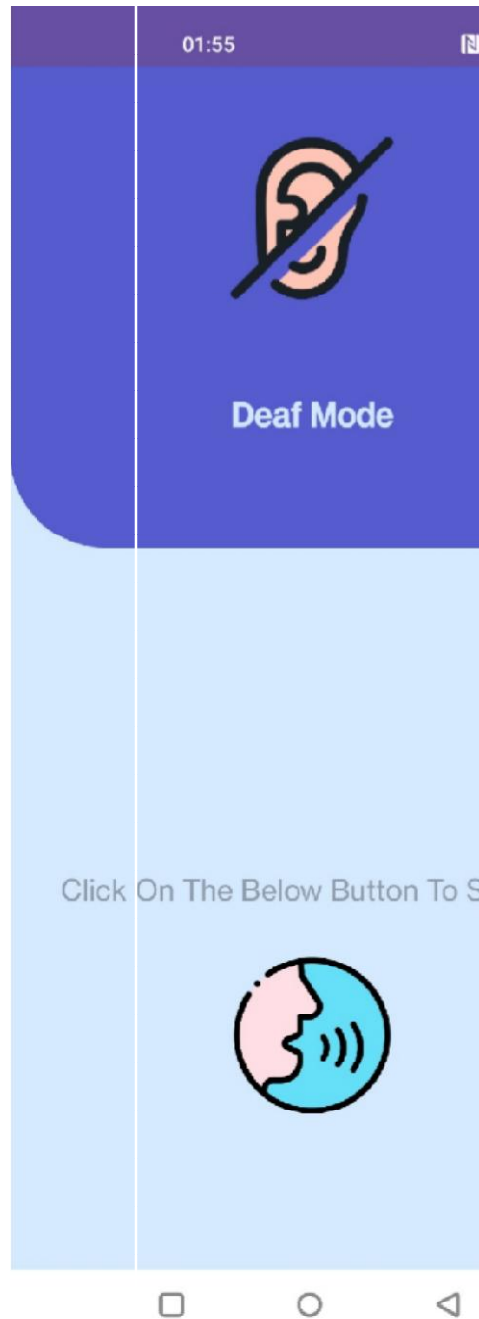
Blind and deaf individuals face numerous challenges in communication, navigation, and accessing essential information. Traditional solutions often require them to use multiple platforms, which can be complex and time-consuming. Additionally, a lack of accessibility and proper integration makes it difficult for them to find reliable assistance that caters to their specific need.

The Blind and Deaf Helping App is designed to provide a seamless and user-friendly solution. It integrates essential tools such as voice-to-text conversion, sign language interpretation, and real-time navigation assistance. By centralizing these features, the app saves valuable time and reduces the dependency on scattered or inaccessible resources, ensuring a more inclusive and independent experience.

**Output:**







**Software & Tools:**

For the Blind and Deaf Helper App (with only Text-to-Speech and Speech-to-Text functionality), the required Software includes:



**Operating System Requirements:**

Android OS 7.0 (Nougat) or higher.

Jdk (Java).

Compatible with Android smartphones and tablets.

**Installation Requirements:**

APK file should be installed on an Android device with the required OS version.

Google Play Services should be up to date for Speech Recognition and TTS to function properly.

**Programming Languages:**

Java (Primary language used in your code)

XML (For UI layouts)

**Applications:**

The Blind and Deaf Helper app has several applications, including:

- Assisting Visually Impaired Individuals – Helps blind users by reading out the copied text from documents.
- Helping Deaf and Hard-of-Hearing Users – Converts spoken words into text for better communication.
- Educational Support – Converts a teacher’s speech into real-time text, helping students who have difficulty hearing lectures i.e. It helps in note- taking during classes.
- Workplace Accessibility – Supports deaf and blind employees in professional environments.

**End-User Benefits:**

- The Blind and Deaf Helper app has several applications, including:
- Assisting Visually Impaired Individuals – Helps blind users by reading out the copied text from documents.
- Helping Deaf and Hard-of-Hearing Users – Converts spoken words into text for better communication.
- Educational Support – Converts a teacher’s speech into real-time text, helping students who have difficulty hearing lectures i.e. It helps in note- taking during classes.
- Workplace Accessibility – Supports deaf and blind employees in professional environments.

**II. CONCLUSION**

The Blind and Deaf Helper App is a simple yet effective solution designed to bridge the communication gap for individuals with visual and hearing impairments. By providing speech-to-text, text-to-speech, and image-to-text functionalities, the app enhances accessibility and independence for users in daily interactions.

With its user-friendly interface, real-time processing, and accessibility features, the app ensures that blind and deaf individuals can communicate effortlessly in various situations, including personal conversations, education, workplaces, and public services.

The application has the potential for further enhancements and scalability, such as AI- powered speech recognition, sign language integration, and offline improvements, making it a valuable tool for accessibility in the future. Overall, the app significantly improves the quality of life for visually and hearing-impaired individuals by providing them with an inclusive and efficient communication solution.

