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Voice Assistant App for Blind People - Blindly Go

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Abstract: ***A person's ability to carry out daily duties is limited by a visual impairment, which may also impact their level of well-being and capacity to interact with the outside world. I frequently encounter visually handicapped folks whose vision loss cannot be improved. An individual's ability to carry out daily tasks and get around independently may be hampered by blindness. People who are blind to varying degrees can participate in peer-to-peer activities with the help of quality rehabilitation. Although most people are reluctant to use orthodontic lenses, they will like them. Modern technology is sometimes not made for the visually handicapped, making it challenging to operate. To make life's challenges a little easier, I decided to utilize an Android app for the blind. Therefore, this software can help those frequently dependent on others in various ways regain independence and confidence.***
Keywords: (Android Studio, Currency Recognition, JAVA, OCR, Voice Assistant)

I. INTRODUCTION

Visually impaired people are often reluctant to use the resources of the visually impaired because of other factors such as social stigma and discrimination and lack of accessibility. They do find it extremely challenging to glimpse the outer world. On Earth, it is impossible to process real-time data using current equipment. The purpose of this project is to develop a real-time app that the blind can utilize. Smartphones are frequently available, and using one can benefit blind people. Every design and structure is thoroughly examined for those who are blind. For people who are blind, this program is free and simple to use. This application uses technologies such as Android Studio and Java language.

Implementation of software that helps visually impaired people access the Internet. This document also implements that visually impaired people can use voice to access the Internet and use voice commands to navigate the site. Virtual assistants provide an easy way to access virtually any website for people with disabilities. This study is relevant for applications that only support English commands [1].

An analysis and understanding of the mobile app development industry globally and in India, understanding application development preferences, usage, revenue, cost, and scope in India, and conducting a SWOC analysis of the mobile app software development industry. To do. This research paper provides an overview of mobile app development. Also, an introduction to the Indian app development industry and mobile app development costs. According to a survey, the app development industry has grown exponentially since its inception [2]. Visually impaired people use these techniques to lead an independent and normal life, and also text recognition and analyzed text reading, voice input, and output of these. Point out that it has characteristics. This study demonstrates how crucial a role these technologies have had in the growth of the IT industry. Here, we've attempted to employ these strategies so that visually impaired people can live independent and regular lives. The main issue with current systems is that they only function in English and are not able to support other languages. It is inoperable offline, and receiving comments necessitates an online connection [3]. The app contains various sections such as smartphone accessibility, voice control, tools, camera-based identifiers and readers, navigation maps, book readers, and more. The app includes a variety of mini-games for the visually impaired, including directions, memory, runners, hearing tests, checksums, animals, sounds, and more. The advantage of this survey is that the app makes the visually impaired (VIP) more self-reliant and confident in society. This allows you to read a book, recognize colors, use voice controls, and access maps and navigation [4]. With the release of the Windows operating system, a dramatic shift in focus occurred as most developers shifted their attention to the challenges presented by image processing itself. The necessary toolkit for image processing should facilitate the analysis and recognition of images with previously unidentified content and ensure efficient application development by regular programmers. Object recognition This is accomplished by locating the existence of things using a bounding box and determining the types or classes of the objects found. Object segmentation, also known as "item instance segmentation" or "semantic segmentation," is one of the further extensions to this breakdown of computer vision tasks where instances of detected objects are instead represented by highlighting the exact pixels of the object rather than a rough bounding box.

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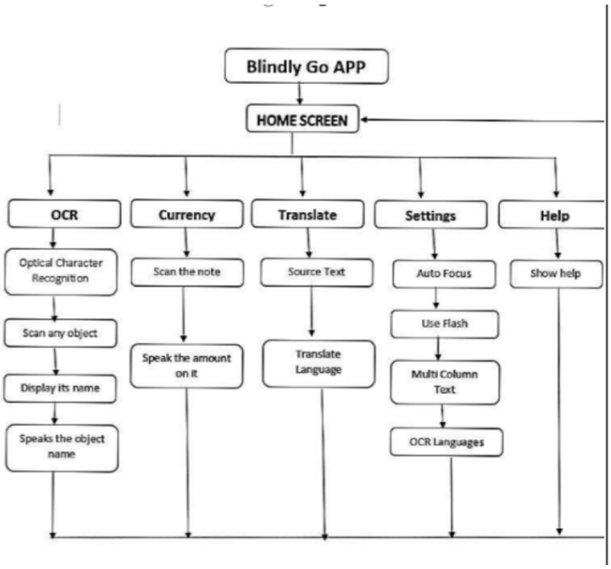
Background: The goal of object detection is to identify every instance of an object in an image that belongs to a particular class, such as people, cars, or faces. The extent of the object as specified by a bounding box is as straightforward as the object's location, scale, or location. A three-dimensional transformation that specifies the object's position in the camera can also be used to describe the pose. This layer has a width, height, and several filters that are all the same as the fully linked layer's shape. The 1D convolutional layer's filter count is equal to the shape of the fully linked layer. [5]

II. PROBLEM STATEMENT

In today's high-tech environment, the visually impaired need to be self-sufficient. The visually impaired cannot see, depend on others, and cannot use technology. Visually impaired people are at a disadvantage because they do not have access to important information about their surroundings. Therefore, we have implemented such a voice assistant app project for the visually impaired. Visually impaired people are at a disadvantage because they do not have access to important information about their surroundings. The gaps that we found in other research papers were the currency recognition module. The new type of settings we added in it like autofocus, use flash, and the OCR language.

III. METHODOLOGY/EXPERIMENTAL

A. Flowchart/Block Diagram.



The project is mainly divided into 5 modules: -

1) OCR (Optical Character Recognition)

a) User can scan any object.

b) Then the app will recognize its name and display it on the interface.

c) It will also speak the name.

It will scan it and speaks the amount on the note.

2) Translate: When any source text is given to the app then will translate that text from one language to another i.e., from Hindi to Marathi or Hindi to English or from English to Marathi or English to Hindi, and so on.

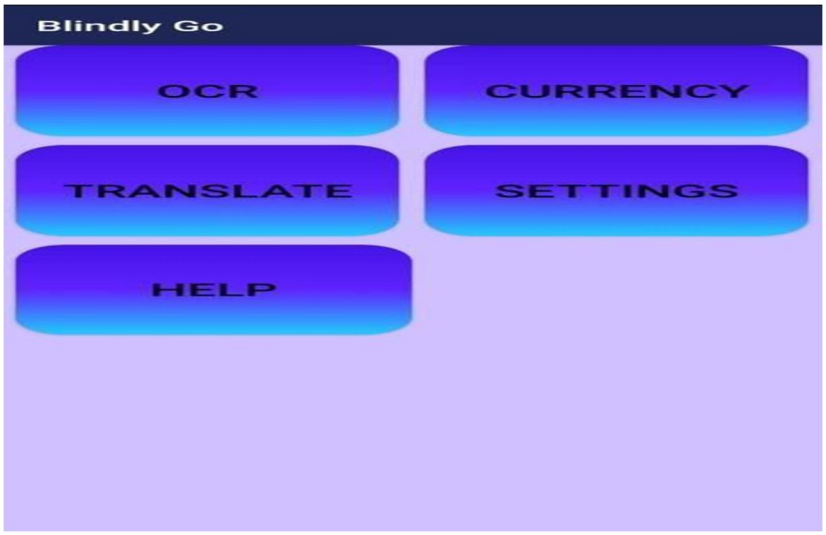
3) Settings: We can able to auto-focus the text or image.

a) We can also use flash for better recognition. Multi-column text is also being added to it.

b) It is possible to change the OCR languages by using a dropdown list.

4) Help: In the help section, some instructions and helpful points are mentioned related to the recognition of text, the recognition of currency, era translation text, and text manager.

IV. RESULTS AND DISCUSSIONS



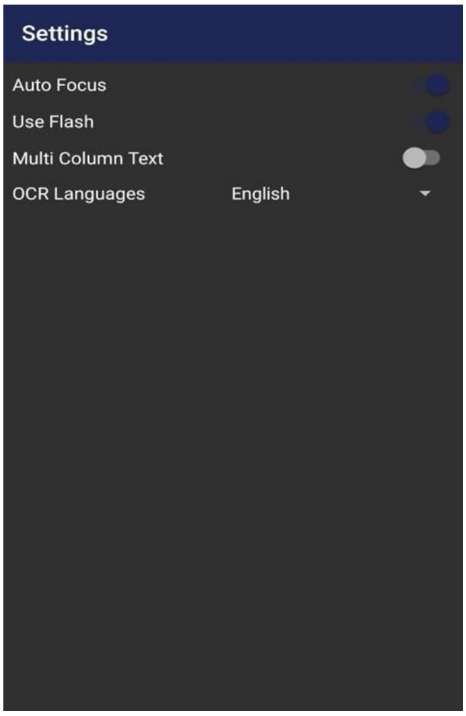
Basic Interface of our App. With voice command



Optical Character Recognition (OCR)



Help Section of our App



Settings Section of our app

V. CONCLUSION

Users will have a wonderful time using the program because it is voice-activated, audience-focused, and user pleasant. The goal of the study is to improve the independence of people with visual impairment. By effectively utilizing the program and its associated voice input, people with disabilities will be able to overcome various obstacles they will face in their daily lives, whether they arise when reading a book or moving through the city. As a result, it will aid in preventing such mishaps. The cameras on mobile devices can be carried around simply, and they are adapted to detecting objects in their immediate surroundings and producing sounds.
so, enabling those who are blind to "See Through the Ears." Additionally, improvements will be made, such as the creation of a fully interactive application and a voice recognition engine that is more advanced. Users will have a wonderful time using the program because it is voice-activated, friendly to their target audience, and user-friendly. The aim is to make visually impaired people more autonomous in their daily life. The application, together with the audio input it provides, can help visually impaired persons overcome some of the challenges they encounter daily, such as reading books and getting around the city. ..As a result, it aids in preventing potential mishaps. Mobile devices are convenient to hold, and you can output nearby items in audio format using the camera on the device. People who are blind can "see through their ears" because of this. To address the issue, more enhancements have been made, including the development of a fully interactive application and a more advanced speech recognition engine.

VI. ACKNOWLEDGMENT

We would like to thank our respected faculty who guided well us in the completion of our project and thanks to our all-group members also. They are extremely dedicated to our project. Because of their moral support and ideas, this project happened successfully.

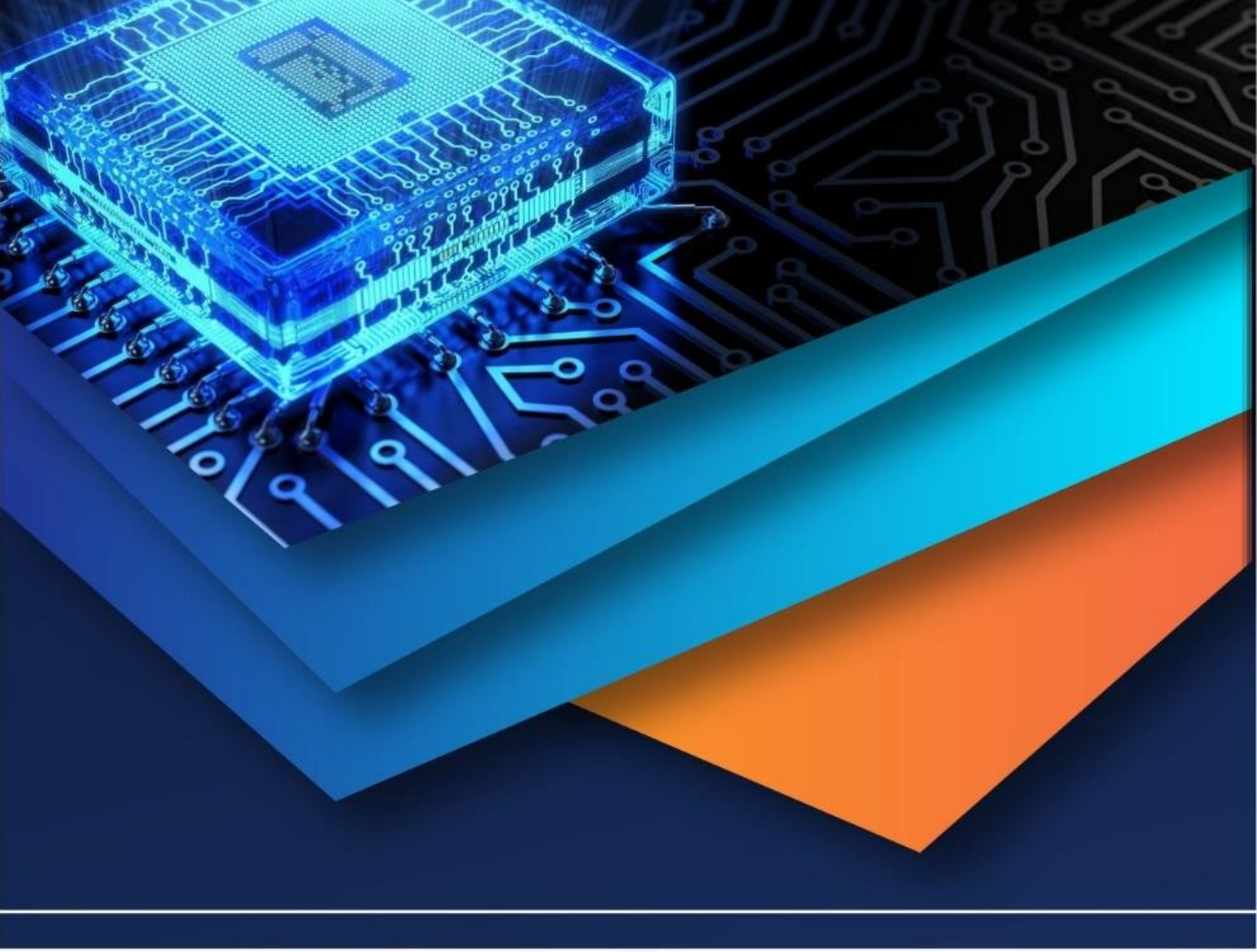
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