Be My Eyes App for Blind People

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Abstract - A person's ability to see is one of their most crucial senses. Many people in this world, many millions of people, struggle with vision problems. These individuals struggle with communication and information access, making it challenging for them to navigate safely and independently. By alerting the blind to the items in their path, the proposed work aims to convert the visible world into an aural one. With the support of real-time object detection technology, this will enable persons with vision impairment to move autonomously and without the need for outside assistance. Through the use of image processing and machine learning, the program can identify things in real time through the camera and communicate their location to blind users through voice output. Many problems have resulted from the inability to distinguish between item.

Indexed Terms- Object detection, Disease Prediction, Voice assistant

I. INTRODUCTION

There are millions of people who experience vision impairment in one way or another. Many blind people have significant mobility issues when moving around their surroundings. Due to this condition, the disabled person needs aid or instruction with every move. The everyday, professional, and social lives of those who are blind are quite challenging. The amazing ability of human eyesight to store billions of images in the brain and realise those images by comparing them to preimages However, some people are still born without the gift of sight, and some have retinal disorders. Due to the widespread use and popularity of Android-based devices, the computer vision application is implemented on the Android platform.

"Be My Eyes" is an android application, which supports voice commands and real time video. The application is developed for visually impaired people. After unlocking the mobile phone the application will be launched without any voice command. The systems accept voice command and perform the operations according to it. For performing the further task it first translate the voice into text and then produces output in the form of voice.

II. RELATED WORK

OVERVIEW

The application has a very simple and easily navigable User Interface that suits the visually impaired users. As soon as the application is launched, the camera will start capturing the real time video. As soon as the user presses a button up, the server-side backend algorithm will start processing it and notify the user accordingly as output audio. The Yolo algorithm can be stopped by pressing the same button again. This is how objects around the blind people and their positions are detected and conveyed to them via an audio output using the YOLOv3-tiny algorithm. Proposed a system to predict the disease based on symptoms given by user. We provide Hash set dataset for disease prediction. When the user presses a button down the application will work on voice commands. It will performs the tasks like show battery status, shoe date/time, send sms, make a call etc.

SOFTWARE REQUIREMENTS:
IDE: Android Studio Coding
Language: Kotlin
Operating System: Windows 10 (64 Bit)

HARDWARE REQUIREMENTS:
RAM: 8 GB
Hard Disk: 500 GB
Processor: Intel i5 Processor

SOFTWARE INFORMATION

Android: Before learning all topics of android, it is required to know what is android. Android is a software package and Linux based operating system for mobile devices such as tablet computers and smartphones. It is developed by Google and later the OHA (Open Handset Alliance). Java language is

mainly used to write the android code even though other languages can be used. The goal of android project is to create a successful realworld product that improves the mobile experience for end users. Features of Android After learning what is android, let's see the features of android. The important features of android is given below:

1) It is open-source.
2) Anyone can customize the Android Platform.
3) There are a lot of mobile applications that can be chosen by the consumer.
4) It provides many interesting features like weather details, opening screen, live RSS(Really Simple Syndication) feeds etc.

Android Application There are many android applications in the market. The top categories are:

1. Entertainment
2. Tools
3. Communication
4. Productivity
5. Personalization
6. Music and Audio
7. Social
8. Media and Video
9. Travel and Local etc.

Kotlin and XML Gui: Kotlin is a statically typed, general-purpose programming language developed by JetBrains, that has built world-class IDEs like IntelliJ IDEA, PHP Storm, App code, etc. It was first introduced by JetBrains in 2011and is a new language for the JVM. Kotlin is an object oriented language, and a "better language" than Java, but still be fully interoperable with Java code. Kotlin is sponsored by Google, announced as one of the official languages for Android Development in 2017. Package versions in Anaconda are managed by the package management system conda. This package manager was spun out as a separate open-source package as it ended up being useful on its own and for other things than Python. There is also a small, bootstrap version of Anaconda called Mini conda, which includes only conda, Python, the packages they depend on, and a small number of other packages. XMLGUI is a KDE framework for designing the user interface of an application using XML, using the idea of actions. In this framework, the programmer designs various actions that his application can implement, with several actions defined for the programmer by the KDE framework, such as opening a file or closing the application. Each action can be associated with various data including icons, explanatory text, and tooltips. The interesting part to this design is that the actions are not inserted into the menus or toolbars by the programmer. Instead, the programmer supplies an XML file, which describes the layout of the menu bar and toolbar. Using this system, it is possible for the user to redesign the user interface of an application without needing to touch the source code of the program in question. In addition, XMLGUI is useful for the K-Parts component programming interface for KDE, as an application can easily integrate the GUI of a K-Part into its own GUI. The Conqueror file manager is the canonical example of this feature.

SYSTEM ARCHITECTURE

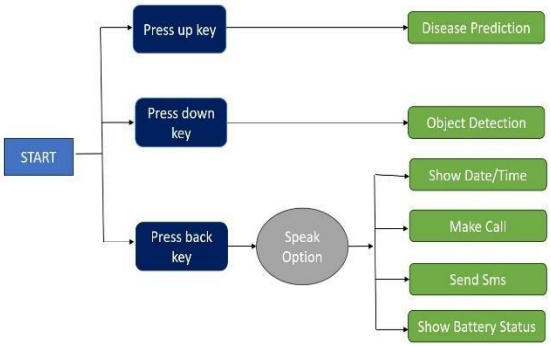


Fig. SYSTEM ARCHITECTURE

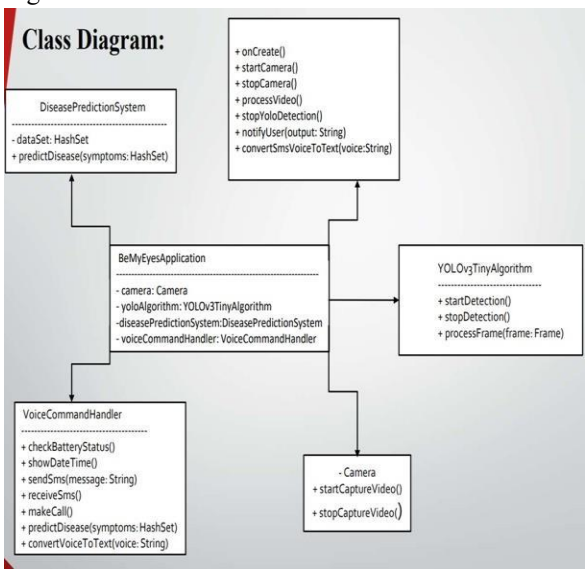
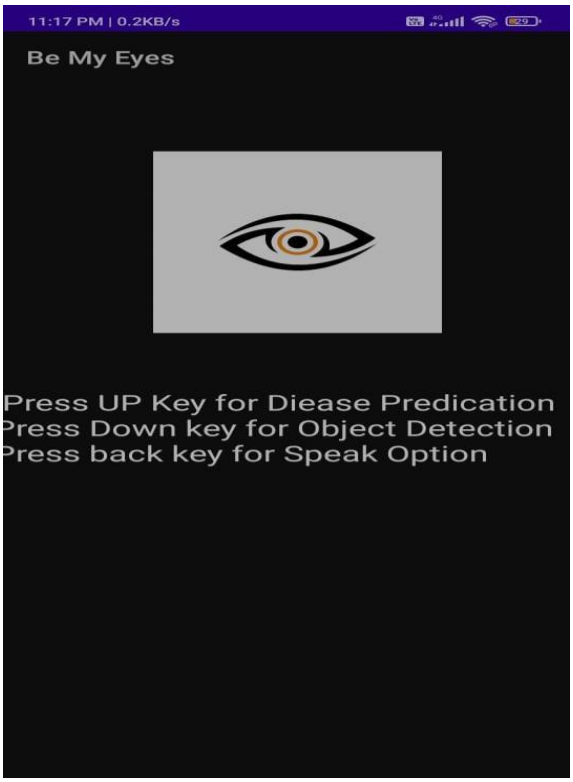
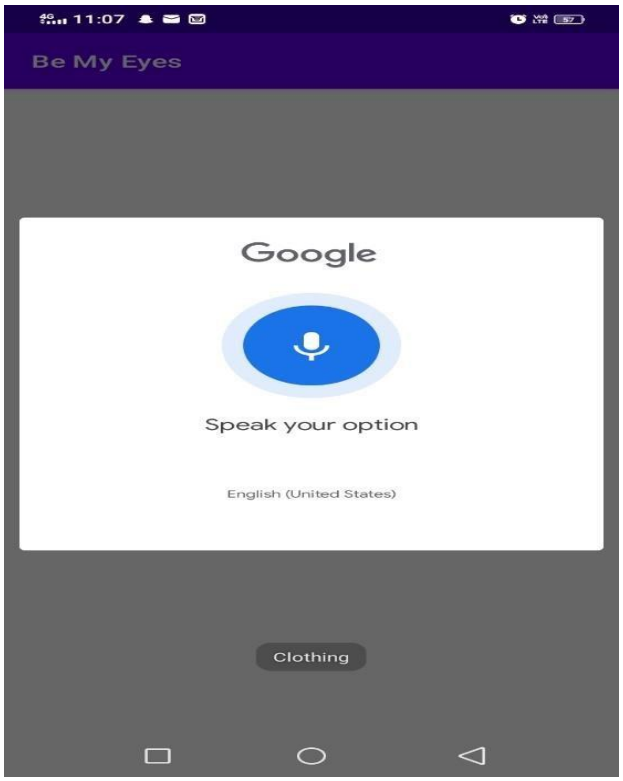
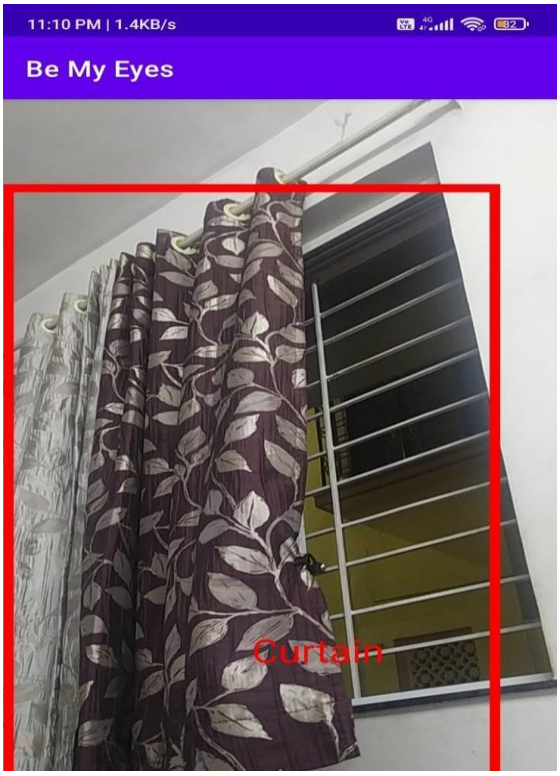


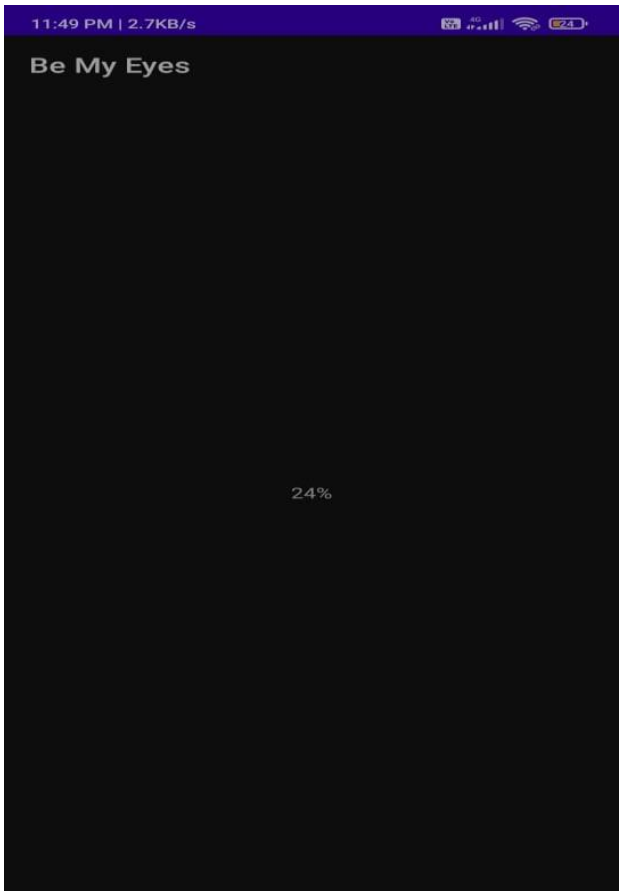
Fig. Class diagram

III. IMPLEMENTATION AND RESULTS









IV.CONCLUSION

The application has a very simple and easily navigable User Interface that suits the visually impaired users. As soon as the application is launched, the camera will start capturing the real time video. As soon as the user presses a button, the server-side backend algorithm will start processing it and notify the user accordingly as output audio. The Yolo algorithm can be stopped by pressing the same button again. This is how objects around the blind people and their positions are detected and conveyed to them via an audio output using the YOLOv3-tiny algorithm. Proposed a system to predict the disease based on symptoms given by user. We provide Hash set dataset for disease prediction. In this application through users voice commands it perform tasks like check battery status, show date/time , send or receive sms , make a call and disease prediction. the application converts sms voice to text form.

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