

Project proposal

Android Application For visually impaired person

Project code:

<Project code assigned by the Project Office>

Project Advisor:

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Submission Date:

20 Sep,2019

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Abstract:

Application for detecting an object using the mobile camera and giving voice instructions about the objects, recognized by camera and to give the direction of an object to the blind person. System extracts the features to search objects in the camera view to know the direction of object, where it is placed using angle extraction feature. The camera of the phone is enough for this purpose and no special hardware is required, ensuring that it requires minimal effort from the user to use the application during everyday life. Many of us need to make a call or send a message at anytime from anywhere. So In this application, any blind person can easily make a call and send a message to any desired person. Also the proposed system converts the text into audio for giving the notifications about the application to the blind person and for such conversion the Speech synthesizer technique gets used. Application has also the capability to measure the distance by taking the current and designation location. System gets used in social approach where the object in place or in path everyday life and with the help of this system blind person easily travel or visit common places such as school, college, hospital, shopping mall and travel on roads.

Background and justification:

Background:

We design an application to work in situations where blind people might typically have to ask for help like learning about a new space for the first time, reading text and documents, and completing daily routines such as cooking, cleaning and shopping. By holding or wearing your device (we recommend hanging your phone from a lanyard around your neck or placing it in a shirt front pocket), app tells you about people, text, objects and much more as you move through a space. Once you've opened the app, all you have to do is keep your phone pointed forward. You would not have to tap through any further buttons within the app, so you can focus on what you are doing in the moment. 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. It performs basic functions such as calling, messaging and distance measure.

Justification:

As with any new technology, this app will not always be 100 percent perfect. App detects items in the scene and takes a best guess at what they are, reporting this to you

and also make sure to respond according to instructions of blind user like to make call, send or read message or measure distance.

Project Methodology:

- **Android based development:**

In this project we make an android application for visually impaired person that is used to recognize the objects and reading any books through lookout feature. Application facilitates the blind user with the call, message and distance measuring features. Person will simply have to install an application on their cell phones to access objects and enhance the knowledge. Through this application, blind person can easily walk out anywhere, read any text, measure distance, and can make call or send message. We develop this application in java language for a backend purpose and xml language for a frontend purpose using a software android studio. Following step involved in this phase:-

- Graphical user interface for an application.
 - Developed feature used within application e.g. Lookout camera functionality.
 - In which we provide option of help that help the blind person to understand about the application.
 - The option of call and messaging through voice command.
 - A feature to measure the distance of current location to designation location.
- **Speech to Text(STT):-**
Android has a inbuilt feature that is speech-to-text through which user can provide speech input to the software. In the Background speech input will be converted to text and perform action in the Form of TTS.
 - **Text to Speech (TTS):-**
TTS is a method that converts speech from text.
TTS is important for voice output for voice feedback for user. TTS is

Implemented in software where audio capability is required. When user enters voice command, TTS will convert that voice into text format and performs specific action.

Project Scope:

The scope of this project is to provide technical solution and to assist the visually impaired people to access various object, reading a books and enhance their knowledge. It is a handy device with a lookout camera feature which captures the objects, text and converts it into a speech signal that is easily read out and blind person can easily hear the voice, then easily recognize the object. For blind and motion-impaired people this issue is more obvious. Using the feature of calling and messaging, any blind person can contact easily to the desire person. This application can only be used with internet connection.

High Level Project Plan:

- **Proposed tool and platform:**

The software requirement includes android studio tool for android application in mobile phone and there is no hardware requirement.

References:

- 1) <https://www.researchgate.net/publication/315830657> Be My Eyes Android App for visually impaired people
- 2) Design Document

Chapter 2

Feasibility Study

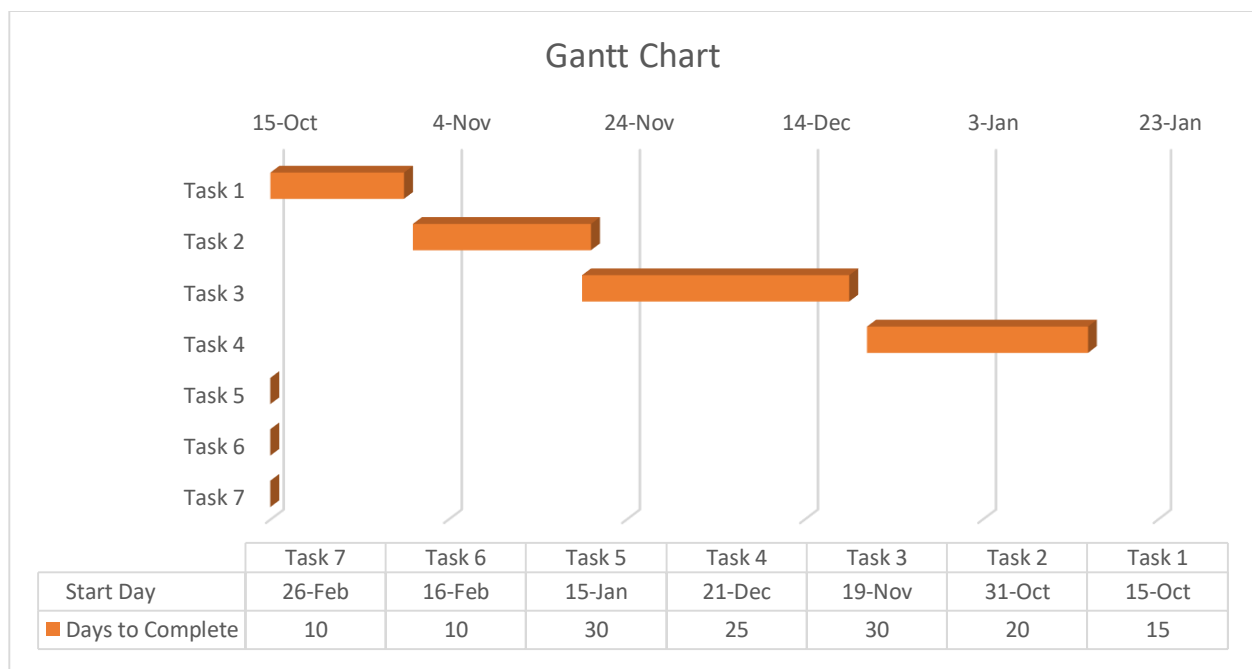
Technical Feasibility:

The technical feasibility of this application involves the language which is being used to develop the project. The project entitled "Friendly Android Application for visually impaired person" is a combination java and xml based technology to be used within android. We will develop this application in java language using a software android studio. The developmental phase of the application consists of a graphical user interface, lookout, distance measure, call and message features which would provide a user-friendly display, easy to use and operate.

Economic Feasibility:

We have to buy APIs for speech purpose. Our estimated budget is 10000. It may be increase.

Time Feasibility:



Legal Feasibility:

Our project follow the rules and regulation of government. This project is totally under the law of Pakistan. We are not doing such type of activities which violate the laws of Pakistan.