Project Title: SAKSHAM (An Android Application)

Team Number: 05

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TEAM MEMBERS

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PROBLEM UNDERSTANDING

To develop an android application to make the use of smartphones convenient and equally acceptable by disabled people. It provides several features like object detection using monocular camera, audio book, changing the audio profile of the misplaced phone, getting the exact location of the misplaced phone, getting the number of any selected contact using passcode. The problem of the physically handicapped is, therefore, as old as human life itself. Problems of the physically handicapped vary in time and space. Their problems are multi- dimensional physical, psychological, social, cultural, educational and vocational. Each category of disability poses a different set of problems. Problem of Physical Mobility Problem of Reading and Communication Lack of job-oriented training facilities

INTRODUCTION

"A word like handicapped once was used very widely, but now would generally be considered to be not appropriate to use" - Dr. Laugesen .

People with disabilities are one of the most marginalised and excluded groups in society.Disabled people face a lot of obstacles in their everyday routines, where they have to move from one place to another. Saksham is an open-source smartphone Android app. Technology has been changing our lives drastically, nowadays smartphones are part of our lives as a personal assistant however disabled are not able to use it efficiently. To enhance the acceptance of smartphones evenly by the disabled community our proposed android application makes the day-to-day usage of smartphones apps convenient and easy., Read rich text as audio-book with support of several regional languages. And they can find the location of their misplaced phone, get the required contact number if they have left behind their phone, and change the audio profile of their phone even if they don't have their phone nearby.

LITERATURE SURVEY

- Understanding User Centred Design (UCD) for People with Special Needs -Harold W. Thimbleby Published in ICCHP 2008.
- Obstacle Detection Based On Monocular Camera and Size Expansion Algorithm and TenserFlow Lite. https://www.ncbi.lmn.nih.gov/pmc/articles/PMC5469666/
- Android Documentation (for android developers) https://developer.android.com/studio/intro

- Object Detection for Mobile and IOT using TenserFlow Lite. https://www.tensorflow.org/lite/models/object_detection/overview

OBJECTIVES:

- Obstacle Detection using Monocular Camera, Size Expansion Algorithm and TensorFlow Lite.
- Get the Phone Numbers from the preset passcode if Phone is left at Home or somewhere else without the use of Internet and only a Simple SMS will do.
- Get the location if phone is lost using simple SMS.
- Read rich text as audio-book using text-to-speech in regional languages using simple SMS.
- Change the audio profile of any phone using simple SMS.

TECHNOLOGY USED:

ANDROID-Full Stack Android Development comprising of Android Studio, Postman, Hibernate, and Service APIs and several SDKs.

Object Detection using TensorFlow Lite- This app makes use of TensorFlow Lite in Object Detection and felicitate the use of Size Expansion Algorithm and Brute Force Matcher.

Cloud(JSON/XML/NoSQL)- Cloud is being used as a database in which traditional, structured data is not followed instead it makes use of JSON, NoSQL or XML

JAVA\XML -Java is used for back-end and XML is used for front-end

HARDWARE AND SOFTWARE REQUIREMENTS:

Hardware: Android Phone, Laptop.

Software: Android Studio, Photoshop, Back4App(Cloud), TensorFlow.

Guide Signature