Project Title: <u>SAKSHAM APP(FOR DISABLED)</u>

<u>Team Number:</u> 5   **<u>Guide Name:</u>**Prof. Girish Uppin

<u>TEAM MEMBERS</u>

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<u>PROBLEM UNDERSTANDING</u>

To develop an android application to make the use of smartphones convenient and equally acceptable by disabled people. It provides several features like calling, text messaging, reading, sign language recognition, calculator.

From time immemorial, man has been struggling against the ravages wrought by disease, accident or feud. 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

<u>INTRODUCTION</u>

"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 marginalized and excluded groups in society. Facing daily discrimination in the form of negative attitudes, lack of adequate policies and legislation, they are effectively barred from realizing their rights to health care, education, and even survival.

Saksham is an open-source smartphone Android app. It connects the vernacular audience, disabled to be precise with users of the same kind or normal citizens.

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. This Application provides

the disabled with the convenience of calling freely to anyone, messaging in the form of speech using Morse code or speech-to-text recognition, calculator using the natural language processing, Read rich text as audio-book using text-to-speech with support of several regional languages and Navigator to guide the route. It also has a Sign language recognition using image processing for deaf and dumb.

LITERATURE SURVEY

- DISABILTYAND ASSISTIVE TECHNOLOGY:Omer Faruk ISLIM, Middle East Technical University, islim@metu.edu.tr, Kursat CAGILTAY, Middle East Technical University, kursat@metu.edu.tr,

There are nearly one billion people with disabilities all over the world and more than a hundred million people have heavy disabilities and need assistance (WHO, 2012). Disability is not a fault and people with disabilities are a part of our community and have equal rights with us. According to United Nations
Convention on the Rights of Persons with Disabilities (CRPD) (2006), providing assistance to disabled people to maximize functioning, support independence and, participate in the community is the duty of governments.The Assistive Technology is an umbrella term that covers many technologies, devices or only methods to
support people with disabilities.The assistive technology varies from a low-tech pen grip to a high-tech multi-touch tablet pc. The common point of all is removing the barriers in front of the disabled people.

- Understanding User Centred Design (UCD) for People with Special Needs
Harold W. ThimblebyPublished in ICCHP 2008
"User centred design" (UCD) has become a central, largely unquestioned, tenet of good practice for the design of interactive systems.
 With the increasing recognition of the importance of special needs in influencing design, UCD needs to be re-examined, in particular to be clear about the difference between using its methods, which may not suit special needs, and achieving its objectives.
 This paper introduces a simple two-category classification of special needs, to which UCD applies very differently and which are heavily affected by developments in technology; in other words, the role of UCD, particularly with respect to special needs, will continue to change and demand close scrutiny.

OBJECTIVES

- To make this app beneficial for the disabled and aid them in every possible way.

- Provide the best interface which makes it user-friendly.

- Make and receive calls.

- Write and read SMS.(Morse Code or Speech Recognition and Gestures)

- Identify the phone number of an incoming call before you answer.

- Read rich text as audio-book using text-to-speech with support of several regional languages.

- GPS Navigator to guide the route.

- Calculator using the Natural Language Processing (NLP) along with Unit Converter.

Technologiy used:

IDE/Frameworks: Android Studio, Postman, IDEA by Intellij,JDK 1.8u232.

Languages/Markup Languages: Java 1.8, Kotlin, XML,JSON, NoSQL.

Environments/Backend: Terminal(Testing), Back4app(Parse) DB handler.

Build Tools: Gradle, Maven

VCS: Git,Github

Hardware and Software requirements

Hardware: Android Phone, Laptop.

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

Guide Signature