Project Design Phase-II
Functional Requirement Template

Date	01 November 2022
Team ID	PNT2022TMID46015
Project Name	Project – **Real -Time Communication System Powered By AI For Specially Abled**
Maximum Marks	2 Marks

Functional Requirements:

Here , **Desktop along with Camera is presented as black box.**
Deaf/Dumb is the person, who will **show different signs based on the type of information being conveyed.**
Normal Person is the passive user of the desktop.

The **System requirements** that are required are specified below,

Deaf/Dumb person should be able to **perform a sign that represents digit/number.**
Deaf/Dumb person should be able to **perform a sign that represents a character.**
Deaf/Dumb person should be able to **perform a sign , where group of characters forms a word.**
Deaf/Dumb person should be able to **perform a sign, where group of words forms a sentence.**
Especially Deaf person should be able to **see the translation of sign to text format.**
Dumb person should be able to **understand the conversion of text into voice mode.**
Normal user should be able to understand the corresponding information conveyed by disabled through sign language.

Hardware Requirements	Software Requirements
Web Camera – (320x260 minimum)	Operating System platform – Windows 7 and greater
Processor – 400 MHz or above	MySQL Database
RAM – 512 MB or above	AdaBoost Face detector
Hard disk – atleast 256 MB free	HTML,CSS,JavaScript and Angular for Webpage
Speaker with a sensitivity of 87-88 DB	MediaPipe framework

Default Operation:

User of the app **faces the camera and perform the concerned hand sign to conveyinformation.**

System/Desktop **analyses the sign made by the user.**

Once analysis gets finished, then the **concerned signs together are shown as a textbased and also through voice.**

Unexpected Operations:

Desktop indicates that user's hand sign is not within the frame or inRegion of Interest(ROI).

1. User of the app **show the hand sign towards the camera.**
2. Desktop shows that **sign is not within ROI.**
3. Still User , make sure to present his/her sign within frame.
4. At last, **Desktop finally detect the hand sign.**

Signs are not recognized

1. **Excepts the signs that are trained and included in the dataset, the Desktopwill never detect the sign rather than this.**
2. User Performs the sign and see that after 50ms, **the concerned letter occupyin the space of text.**

Speech/Voice assistant is implemented

Speech assistant is to be implemented in order to **convert the output textinto voice .**