Project Design Phase-II
Functional Requirement Template

Date	20 October 2022
Team ID	PNT2022TMID31748
Project Name	Project – **Real -Time Communication System Powered by AI For Specially Abled**
Maximum Marks	2 Marks

Functional Requirements:

- Here, **the Desktop along with the 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 sentence.**
- Especially Deaf people especially should be able to **see the translation of signs to text format.**
- Dumb person should be able to **understand the conversion of text into voice mode.**
- **Normal users should be able to understand the corresponding information conveyed by disabled through sign language.**

Default Operation:

- Users of the app **face the camera and perform the concerned hand sign to convey information.**
- System/Desktop **analyses the sign made by the user**.
- Once analysis gets finished, then the **concerned signs together are shown as a text based and also through voice.**

Unexpected Operations:

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

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

- **Signs are not recognized**

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

- **Speech/Voice assistant is implemented**

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