Project Design Phase-II Functional Requirement Template

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| Date | 20 October 2022 |
| Team ID | PNT2022TMID45254 |
| 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.**