PROJECT DESIGN PHASE - II

Date	12 October 2022
Team ID	PNT2022TMID06531
Project Name	Real-time communication system powered by AI for specially abled
Maximum Marks	2 Marks

Functional Requirement

- **System** is presented as black box
- **Hearing impaired** is the person that performs the signs
- **Normal hearing** is the passive user of the system

The **System Requirements** can be 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.**

NORMAL FLOW

- User comes in front of camera and performs the alphabet letter
- System analyses the performed sign
- System shows the sign meaning as text and speech

ALTERNATIVE FLOWS

- **Desktop indicates that user's hand sign is not within the frame or in Region 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 Desktop will never detect the sign rather than this.

2. User Performs the sign and see that after 50ms, **the concerned letter occupy in the space of text.**

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