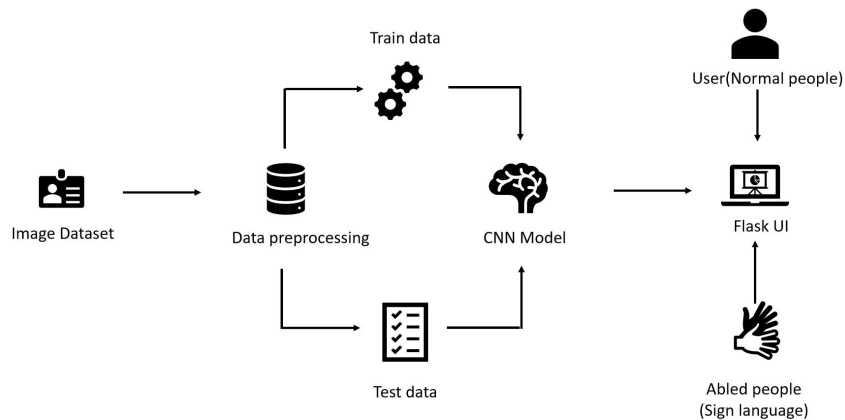


Project Design Phase-II Technology Stack (Architecture & Stack)

| | |
|---------------|--|
| Date | 03 October 2022 |
| Team ID | PNT2022TMID13305 |
| Project Name | Project – Real-Time Communication System Powered by AI for Specially Abled |
| Maximum Marks | 4 Marks |

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2



Guidelines:

1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services
5. Indicate interface to machine learning models (if applicable)

Table-1 : Components & Technologies:

| S.No | Component | Description | Technology |
|-------------|---------------------------------|--|---------------------------------|
| 1. | User Interface | Web UI | HTML, CSS, JavaScript. |
| 2. | Data Set | Collect the data set consist of hand sign gesture. | Form online |
| 3. | Application Logic-1 | Import all the library files required for data pre-processing | Python. |
| 4. | Application Logic-2 | Built the CNN Model. | Python. |
| 5. | Application Logic-3 | Login into Jupyter notebook. | Online or application download. |
| 6. | Data storage | Load / store the dataset and code. | System storage. |
| 7. | Cloud database | Database service on cloud. | IBM Cloud. |
| 8. | Infrastructure (cloud / server) | Train the dataset and model using IBM Cloud. | IBM Cloud. |
| 9. | Machine Learning Model | Used to analyze visual images, image processing video capture and analysis including features like face detection and hand sign detection. | CNN, anaconda. |

Table-2: Application Characteristics:

| S.No | Characteristics | Description | Technology |
|-------------|--------------------------|--|-----------------------------|
| 1. | Open-Source Frameworks | Application development, data pre-processing. | Pycharm, anaconda navigator |
| 2. | Security Implementations | Produces an translation output when speech or sign language is given as an input. | Anaconda |
| 3. | Scalable Architecture | Easy to use. Can be able to respond quickly. Able to produce absolute translation. Should consume less data. Requirement of internet speed. | Anaconda |
| 4. | Availability | Nowadays Deaf mute communication interpreter. Under wearable communication method, there are glove based keypad method and handicom touchscreen. | Artificial intelligence |
| 5. | Performance | Rapid conversion from sign language to text or text to sign language. | CNN Model |