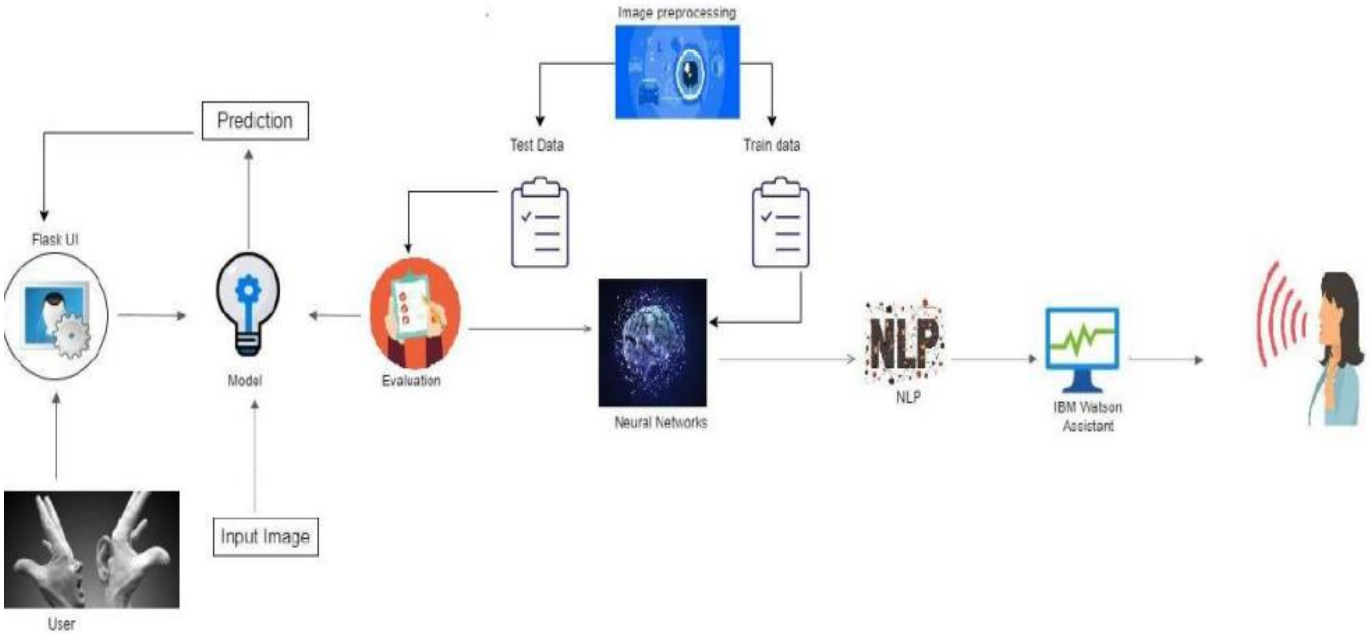
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	29 October 2022
Team ID	PNT2022TMID16097
Project Name	Project - Real-Time Communication System Powered by AI For Specially Abled
Maximum Marks	4 Marks

Technical Architecture:



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	How user interacts with application. (Chat bot user interface)	HTML, CSS, Python
2.	Application Logic-1	User input is given to the model for extraction and prediction of the sign language.	Python
3.	Application Logic-2	The output is given in speech format.	IBM Watson STT service
4.	Cloud Database	Database Service on Cloud	IBM Cloudant
5.	File Storage	File storage requirements	Local File system
6.	External API-1	Used to access the information in the cloud	IBM Weather API
7.	External API-2	Purpose of External API used in the application	Aadhar API, etc.
8.	Machine Learning Model	Used to predict the sign language with accuracy.	Object Recognition Model – CNN model
9.	Infrastructure (Server / Cloud)	Application Deployment on Local System	Local, Cloud Foundry, Kubernetes

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Numpy, Pandas, Keras, Tensorflow	Python framework
2.	Security Implementations	Use of firewalls	SHA-256
3.	Scalable Architecture	Scalability of architecture	SEI Digital library
4.	Availability	Use of Cloud	IBM cloud, IBM Watson Assistant
5.	Performance	Image pre-processing	Python