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

Date	16 November 2022
Team ID	PNT2022TMID01158
Project Name	Project - Real Time Communication Powered by AI for Specially Abled
Maximum Marks	4 Marks

Technical Architecture:

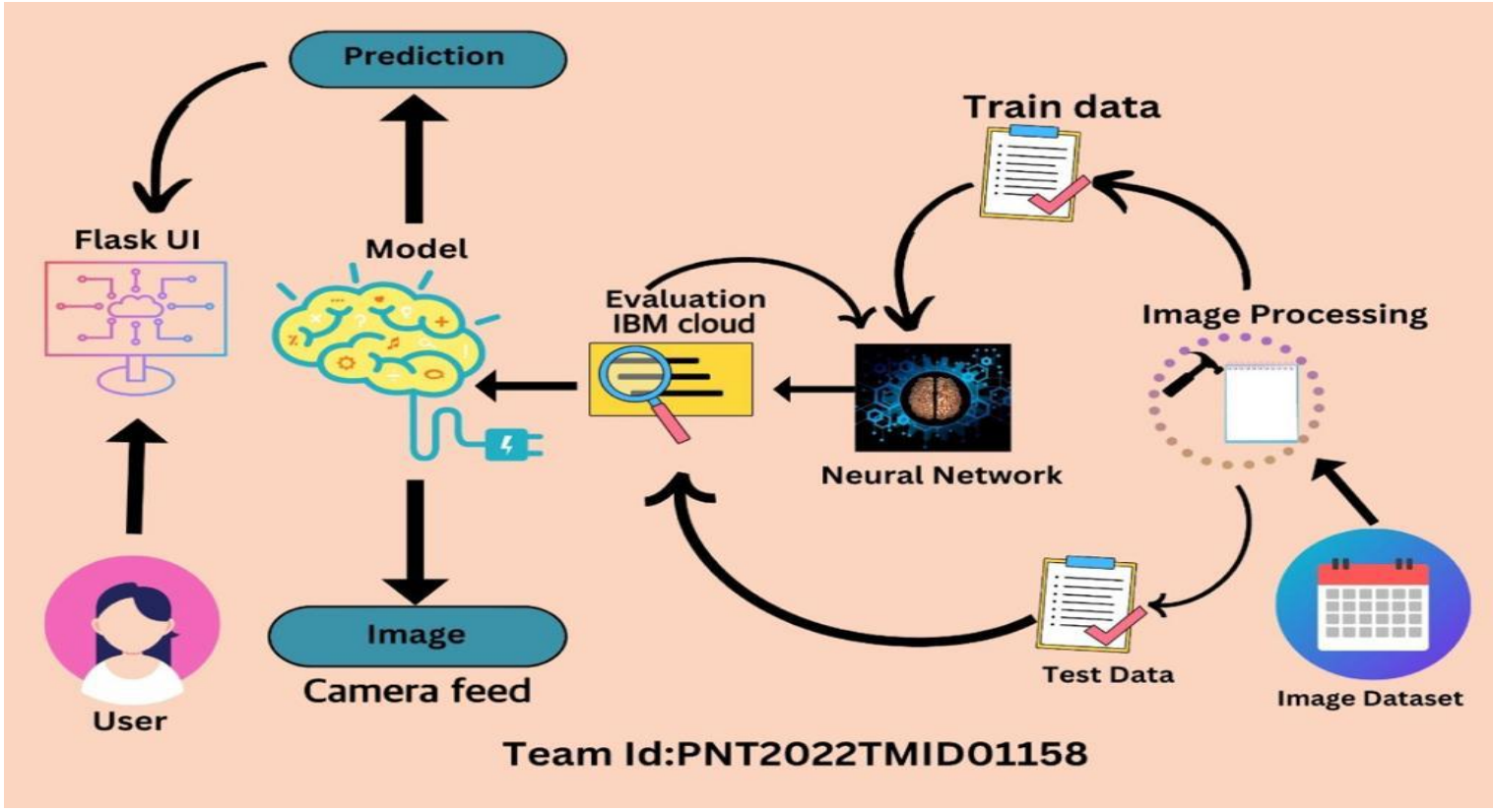

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	User interacts with a Web application.	HTML, CSS
2.	Upload image	User can show the sign language gesture in the web application	Web cam
3.	MODEL	Used for image recognition and tasks that involve the processing of pixel data	CNN
4.	Code	Python can be used on to build the model and application can be built using Flask	Python
5.	Database	NoSQL Database	Cloud and database
6.	Cloud Database	Database Service on Cloud	IBM Cloudant
7.	ML service	Provides a full range of tools so that you can build, train, and deploy Machine Learning models.	Watson Machine Learning service
8.	IBM Cloud	IBM Watson Studio empowers data scientists, developers and analysts to build, run and manage AI models, and optimize decisions anywhere on IBM Cloud Pak for Data.	IBM Watson Studio service
9..	Machine Learning Model (CNN)	The process of identifying an object or a feature in an image or video	Image Recognition
10.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: 64 bit 4GB Cloud Server Configuration : 1V cpu 4GB RAM	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Implementation of data automation, model tracking, performance monitoring, and model training.	Tensorflow, Keras
2.	Scalable Architecture	This project enables the developer to add more templates and it also paves the path to train the model in-case if there is a need to train the model with new sign language.	Artificial Intelligence
3.	Availability	Enables deaf and dumb people to convey their information using signs which get converted to human-understandable language. An app is built by using a trained CNN model.	Web Application
4.	Performance	We are making use of a convolution neural network to create a model that is trained on different hand gestures.The output is predicted when an user shows their hand gesture representing sign language	CNN