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

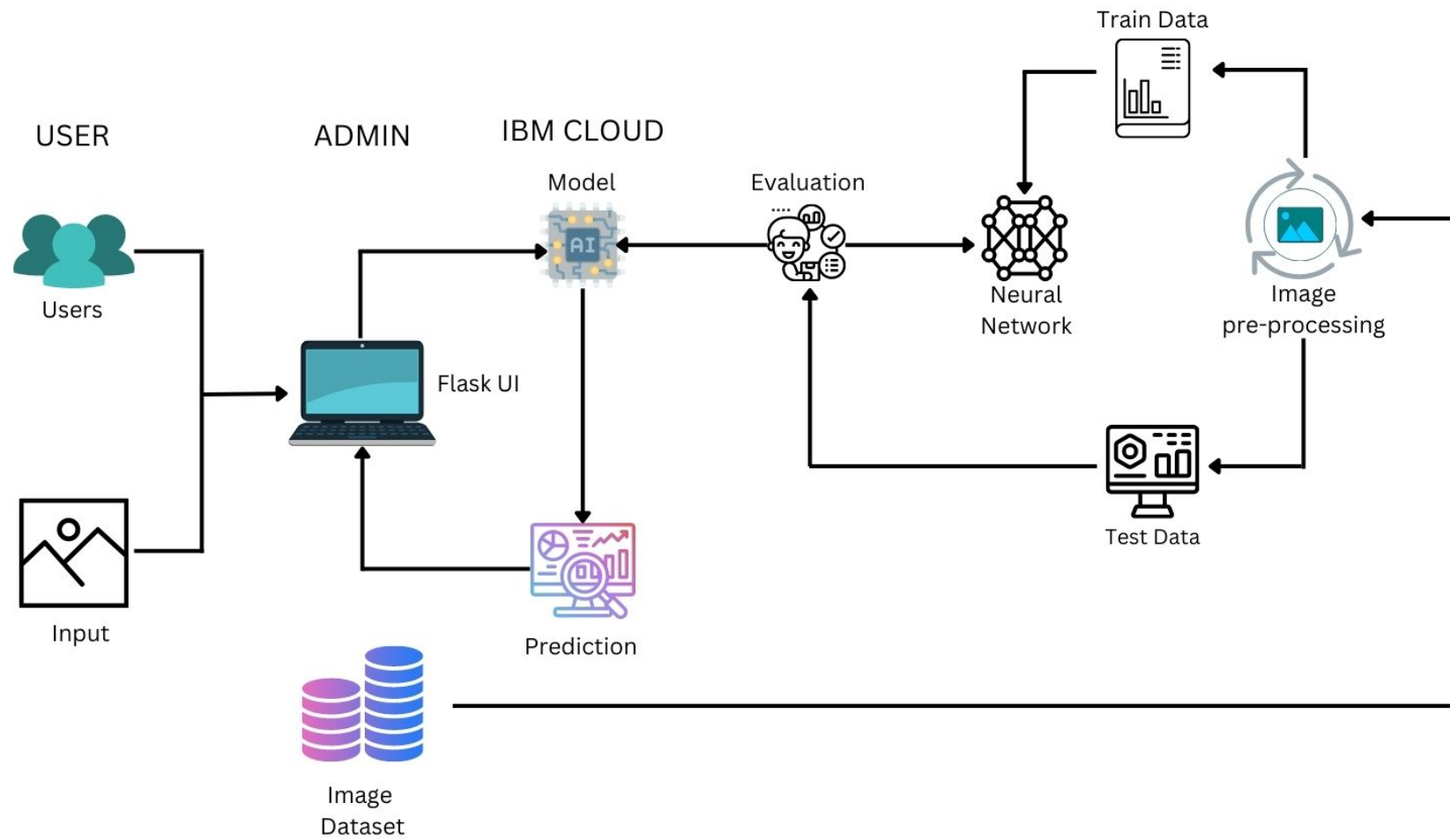| Date	16 November 2022
Team ID	PNT2022TMID04184
Project Name	Project: Real-Time Communication System Powered by AI for Specially-Abled
Maximum Marks	4 Marks

Technical Architecture :

Table-1 : Components & Technologies:

Si. No.	Components	Description	Technology
1.	User Interface	The user interface is where people engage with computers and communicate with them on a device.	Python flask, HTML, CSS/JavaScript.
2.	Flash UI	The user interface elements in Flash enable interaction with visitors to your site and data collection.	Using the cloud, it can be executed.
3.	Models	After that, Support Vector Machine (SVM) is used to categorise our dataset of gesture images.	Machine Learning.
4.	Image	Using a neural network, image processing is utilised to extract indications from the image.	ANN, CNN, Open CV.
5.	Evaluate data	Aims to calculate a model's generalisation accuracy using upcoming (unknown/out-of-sample) data.	NLP.
6.	Unstructured data	Unstructured data is a collection of a wide range of distinct data kinds that are kept in their original formats.	Natural Language Processing (NLP).
7.	Structured data	Typically categorized as quantitative data is highly organizedand easily decipherable by machine learning algorithms.	Machine language and artificial intelligence tools.
8.	File Storage	File storage requirements to store the trained model in order touse it whenever it is needed.	IBM Block Storage or Cloud object.
9.	ML service	Provides a full range of tools and services so that you can build,train, and deploy Machine Learning models.	Python, IBM Watson.
10.	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 Cloud and Watson Studio service
11.	Dataset	A dataset of 24 static signsfrom the Panamanian Manual Alphabet was used in the system's initial prototype.	AI technology.

Table-2: Application Characteristics:

Si. No.	Characteristics	Description	Technology
1.	Open-Source Frameworks	Aids in the use of best practises for model retraining, model tracking, and data automation.	TensorFlow.
2.	Security Implementations	It runs the largest nationwide network of specialised monitoring centres and provides clients with a six-month money-back guarantee.	ADT type of coding.
3.	Scalable Architecture	The data tier, the presentation tier, and the application tier are the three logical and physical processing tiers that make up the well-known three-tier architecture for software programmes.	3 – Tier Architecture.
4.	Availability	The system will be made universal so that everyone can use it.	Web Application.
5.	Performance	The model will be tweaked to find the right balance between performance and accuracy.	Optimization of code and trained model.