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

Date	15 October 2022
Team ID	PNT2022TMID38653
Project Name	Project –Real time communication using AI for specially abled
Maximum Marks	4 Marks

Technical Architecture:

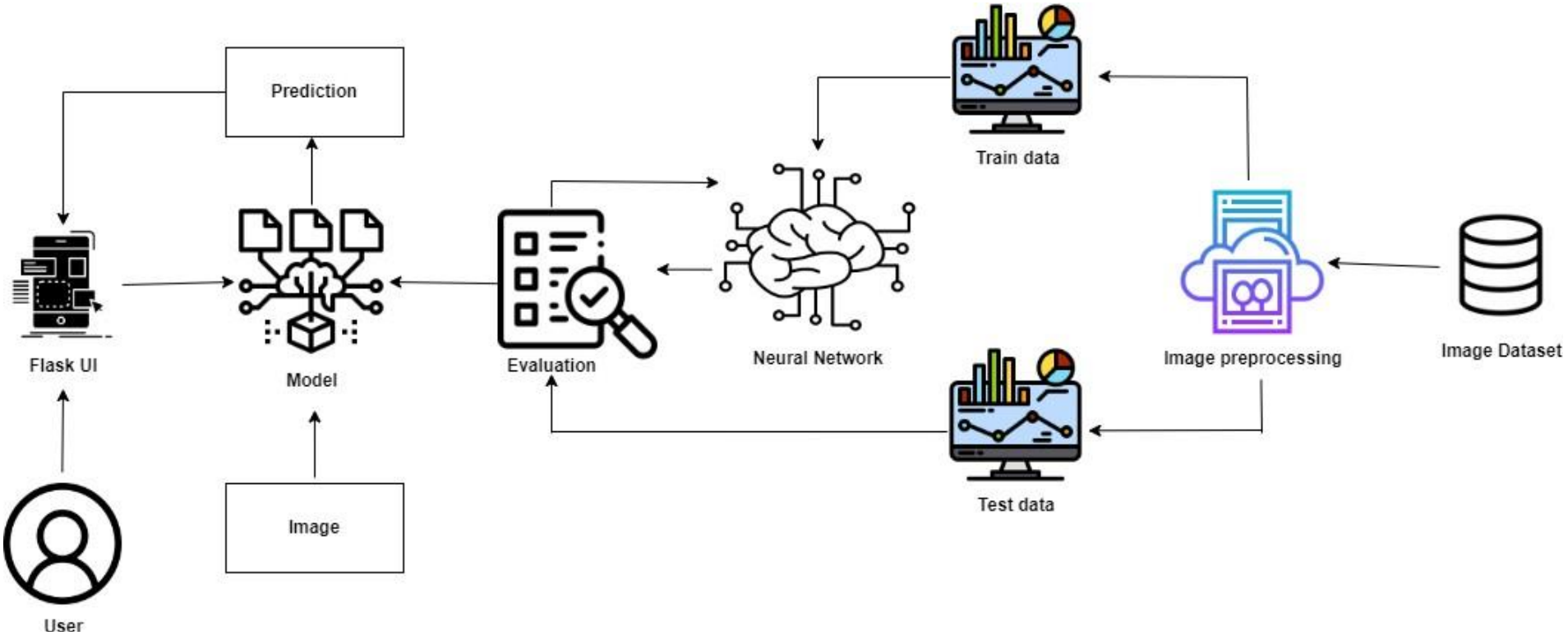

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with the application e.g.Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	Variety of frameworks, libraries and Supports are required to develop the project.	Java / Python
3.	Application Logic-2	Helps in converting human voice into written words, In simple it is used to convert speech to text. Helps to convert the Hand Gestures/Actions into written words.	IBM Watson STT service Machine Learning
4.	Application Logic-3	Provides fast ,consistent and accurate answers After recognizing the human gestures and speech.	IBM Watson Assistant , ANN , CNN.
5.	Database	It can be numerical, categorical or time-series data	MySQL, NoSQL, etc.
6.	Cloud Database	Enables the user to use host database without buying the additional hardware	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage should be highly flexible, scalable and effective ,fast ,reliable.	Other StorageService or Local Filesystem
8.	External API-1	Used to access the information in the cloud	IBM Weather API, etc.
9.	External API-2	Used to access the information for data driven decision making	Aadhar API, etc.
10.	Machine Learning Model	Machine Learning Model deals with various algorithms that are needed for the implementation	Image acquisation
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Install the windows version and execute the installer.	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	The frameworks used in the project are	Tensor flow, Theano, RNN, PyTorch
2.	Security Implementations	the security / access controls are implemented using firewalls etc.	Firewall and other security related softwares.
3.	Scalable Architecture	the scalability of architecture (3 – tier, Micro-services)	Data , models, operate at size, speed , consistency and complexity
4.	Availability	the availability of application (e.g. use of load balancers, distributed servers etc.)	Image and facial recognition, speech recognition and real time captioning.
5.	Performance	Design aspects for the performance of the application (number of requests per second, use of Cache, use of CDN's) etc.	Full and effective participation , equality of opportunity, accessibility, using machine learning for communication.