

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

Date	22 October 2022
Team ID	PNT2022TMID00221
Project Name	A gesture – based tool for sterile browsing of radiology images
Maximum Marks	4 Marks

TECHNICAL ARCHITECTURE:

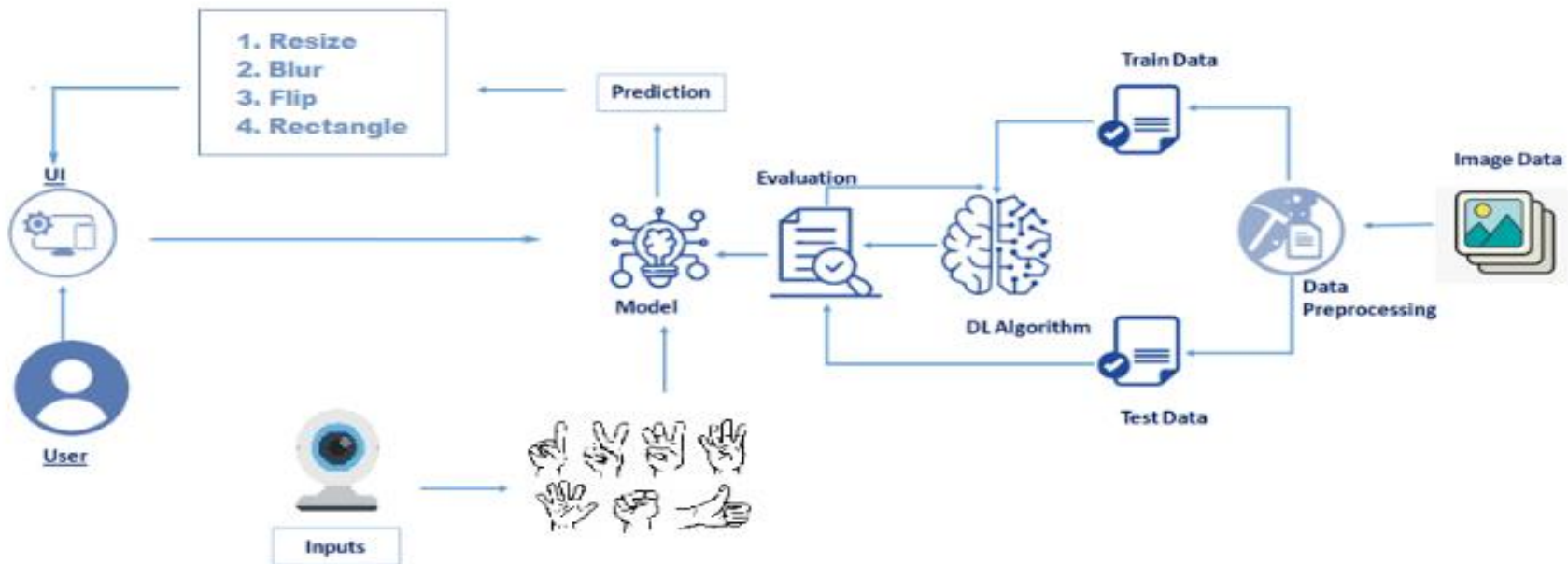


Table-1 :**COMPONENTS & TECHNOLOGIES:**

S.No	Component	Description	Technology
1.	User Interface	How a user interacts with a programme, such as through a chatbot or a mobile app or a web UI.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	To develop the project, a variety of frameworks, libraries, and supports are needed.	Java / Python
3.	Application Logic-2	A deep learning model will be developed to categorise hand movements.	Python, Tensor Flow, Keras , IBM Watson STT service
4.	Application Logic-3	Recognizes human hand movements and signs and responds quickly, consistently, and accurately.	IBM Watson Assistant
5.	Cloud Database	A cloud database will be used to store and train the machine learning model using hand photographs.	IBM Cloudant
6.	File Storage	Images entered by users are kept in the local file system.	Local Filesystem
7.	External API-1	Used to access cloud-based content	IBM Weather API, etc.
8.	External API-2	Used to gain access to data in order to make data-driven decisions.	Aadhar API, etc.
9.	Machine Learning Model	To categorise preprocessed frames split from a video stream, CNN model will be employed.	CNN model using Tensor Flow, Keras
10.	Infrastructure (Server / Cloud)	Installation of the Windows version and execution of the installer are required for local server deployment on local systems and cloud computing environments.	Local, Cloud Foundry, Kubernetes, etc.

Table-2:

APPLICATION CHARACTERISTICS:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Version control, model training, and application development should all be done using open-source software.	Version Control : GitHub, GitLens Editors: Visual Studio Code Languages & Libraries: Python, JavaScript, Tensor Flow, Keras Frameworks: Flask
2.	Security Implementations	Firewalls and other security and access control measures are used.	Software that relates to security, such as a firewall.
3.	Scalable Architecture	The system must serve each request on a distinct thread and limit the number of user requests to one per second.	Python
4.	Availability	The application must be installed on a dependable, high-performance server.	IBM Cloud
5.	Performance	Low inference time, lightweight deep learning model	Tensor Flow, Keras