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

Date	03 October 2022
Team ID	PNT2022TMID22258
Project Name	Project - A Gesture-based Tool for Sterile Browsing of Radiology Images
Maximum Marks	4 Marks

Technical Architecture:

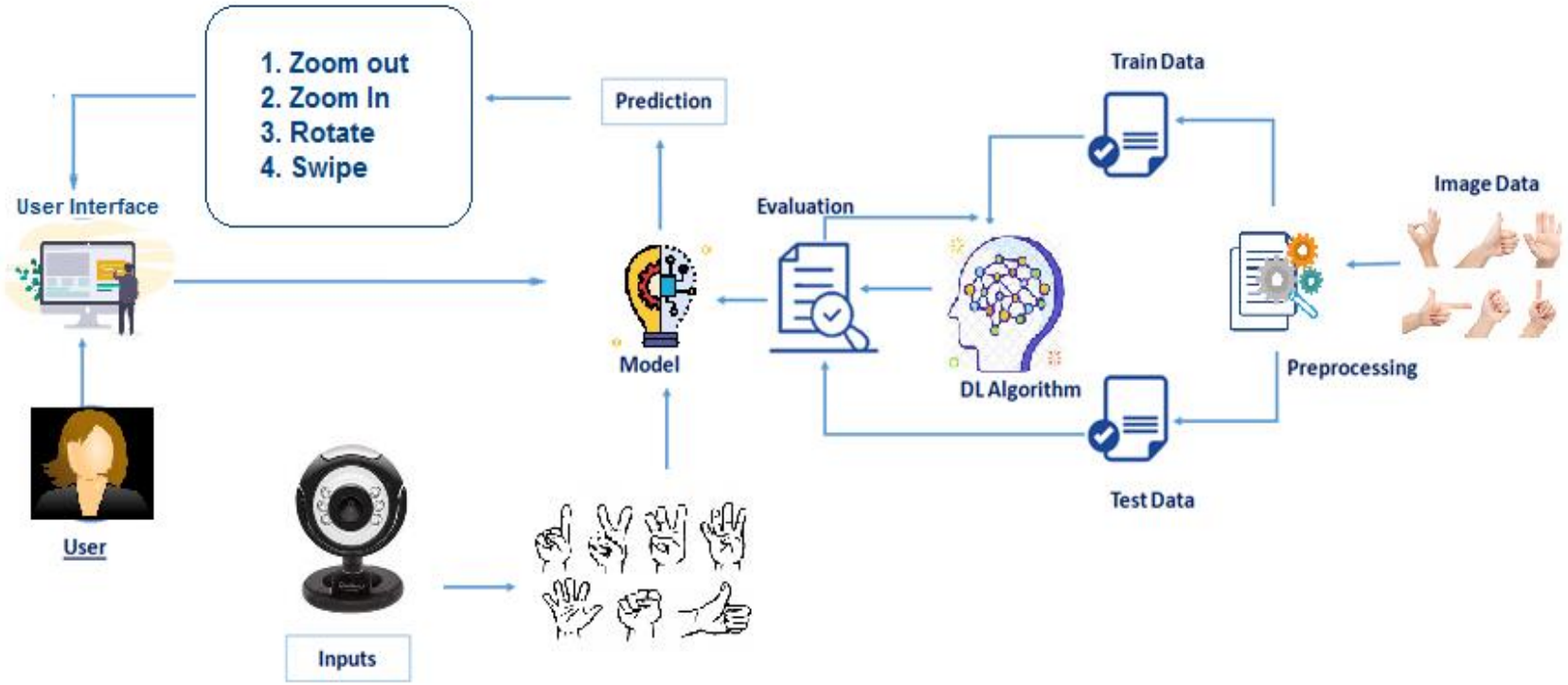

Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The user interacts with the application using Web UI.	HTML, CSS, JavaScript
2.	Application Logic-1 Image Pre-processing	Image is pre-processed by importing several libraries.	TensorFlow, Python
3.	Application Logic-2 Model Building	CNN is used to build the model for testing and training.	Python, Keras
4.	Application Logic-3 Creation of Web Application	A Web Application is created to acquire the gestures and to provide an output.	HTML, CSS, JavaScript
5.	Database	Hand gesture recognition dataset	Kaggle
6.	Cloud Database	The dataset and input images are stored in the cloud	IBM Cloudant
7.	File Storage	File storage accommodates the source code.	Server or Local Filesystem
8.	Machine Learning Model	CNN model is used to recognize the captured images	CNN model by Python, OpenCV

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	For development of code, package management and model building	Visual Studio Code, Conda, TensorFlow
2.	Security Implementations	Gestures can be captured in various fields and environments	OpenCV , TensorFlow
3.	Scalable Architecture	Deploys on highly available server	IBM Cloud
4.	Availability	CNN model is used to predict the input image faster	TensorFlow, Keras
5.	Performance	Data Augmentation is applied to generate more data from a smaller dataset	Keras