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

Date	15 October 2022
Team ID	PNT2022TMID24494
Project Name	Deep learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy
Maximum Marks	4 Marks

Technical Architecture:

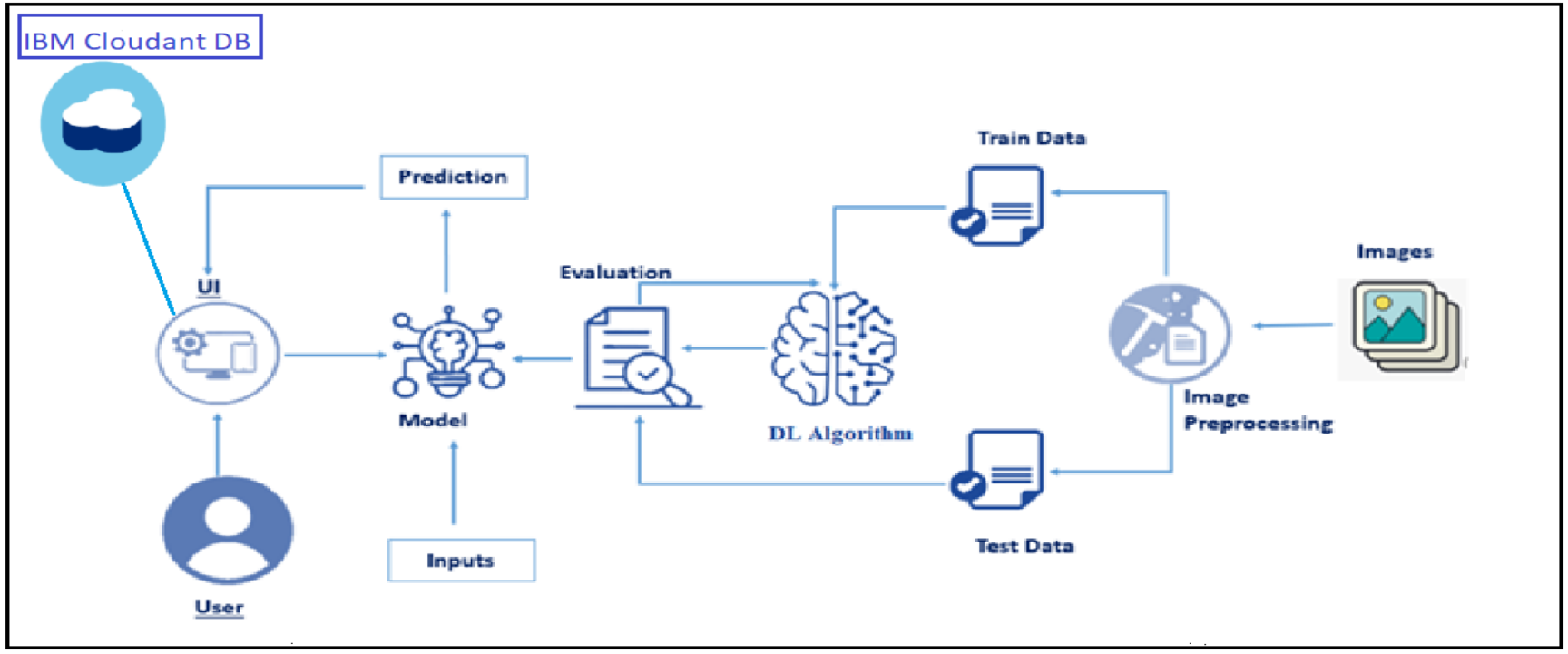

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI.	HTML, CSS, JavaScript or Angular Js or React Js.
2.	Application Logic-1	Image Processing	Python,Pandas and Tensorflow,Keras
3.	Application Logic-2	CNN/ANN building	
4.	Database	Storage of data sets and Evaluation results	MySQL, NoSQL, etc.
5.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
6.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
7.	Machine Learning Model	To analyse the image and detect the disease accurately as possible	A multi layered neural network model to increase accuracy
8.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Flask	Werkzeug, Jinja2
2.	Security Implementations	CSRF addon for Flask for security	Flask-WTF extension
3.	Scalable Architecture	To adapt to changes in core neural network	-
4.	Availability	Easy access to common users through screening camps or remote devices.	-
5.	Performance	Must be able to give results to the user or patients in an understandable and in a timely manner.	-