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

Date	15 October 2022
Team ID	PNT2022TMID06905
Project Name	Deep Learning Fundus Image Analysis for EarlyDetection Of Diabetic Retinopathy

TECHNICAL ARCHITECTURE

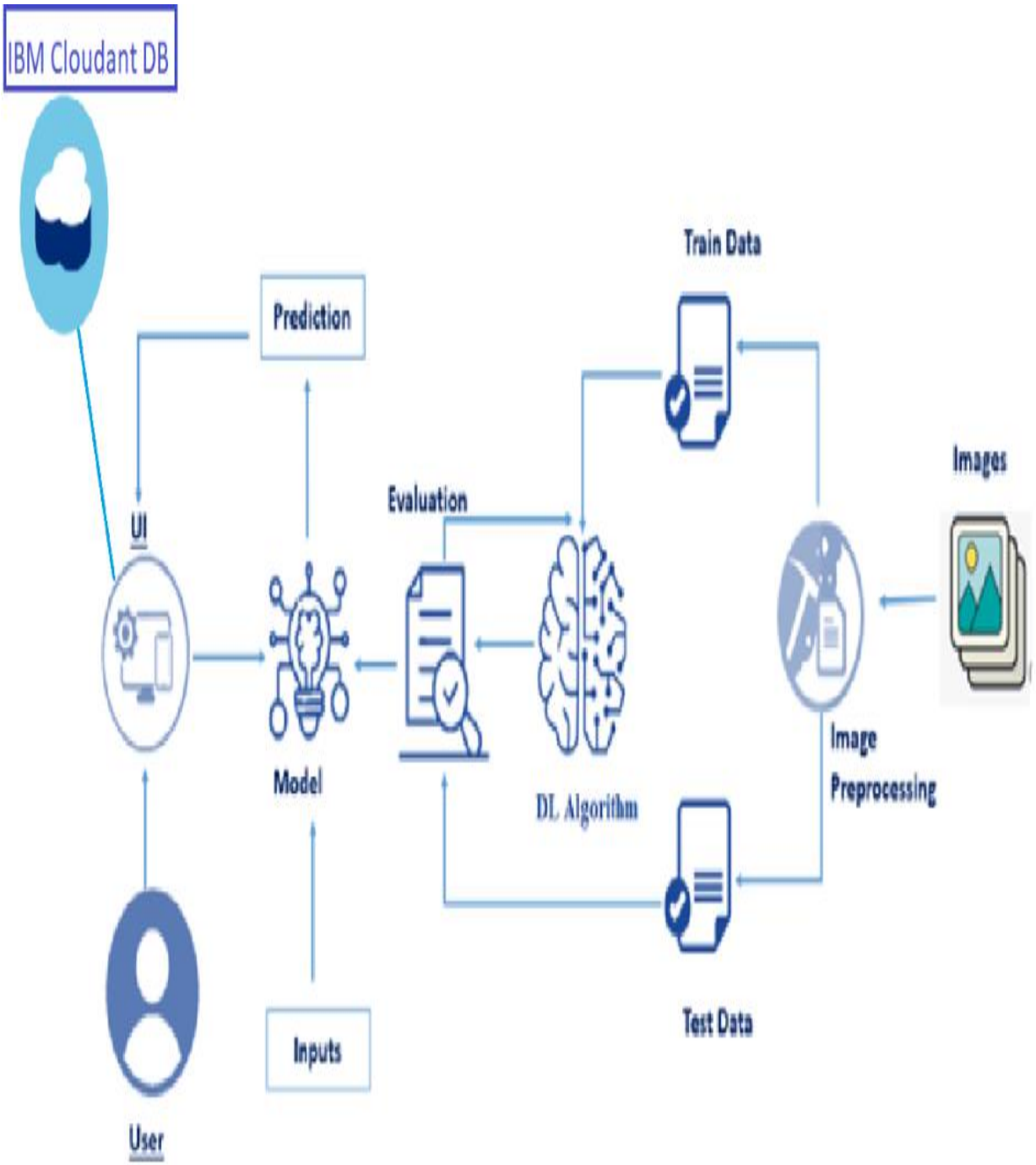

TABLE-1 : COMPONENTS & TECHNOLOGIES

S.No	Component	Description	Technology
1.	User Interface	Web UI	HTML, CSS, JS, Python.
2.	Application Logic-1	Data Preprocessing	Keras, Tensorflow, Numpy - (Importing Essentisl Libraries)
3.	Application Logic-2	CNN Model Creating	Keras, Tensorflow, Numpy - (Importing Essentisl Libraries)
4.	Application Logic-2	Web Application (UI)	Flask
5.	Database	Images (Jpeg, PNG, Jpg, etc..)	Uploads Folder !
6.	File Storage	File storage requirements (only if necessary)	IBM Block Storage / Google Drive (Depends On Preference)
7.	External API	Keras	Image Processing API.
8.	Deep Learning Model	Inception v3 architecture	Pretrained convolution neural network model that is 18 layers deep
9.	Infrastructure (Server / Cloud)	Application Deployment on Webserver	Flask—a Python WSGI HTTPserver.

TABLE-2: APPLICATION CHARACTERISTICS

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Flask	Werkzeug, Jinja2, Sinatra Rubyframework
2.	Security Implementations	CSRF protection, secure flag forcookies	Flask-WTF, SESSION_COOKIE_SECURE
3.	Scalable Architecture	Micro Services	Micro web application framework by Flask.
4.	Availability	-built-in development server and fast debugger -integrated support for unit testing -RESTful request dispatchingJinja2 templating Unicode based	Werkzeug, Jinja2, Sinatra Rubyframework
5.	Performance	ORM-agnostic, web framework, WSGI 1.0 compliant, HTTP request handlingfunctionality High Flexibility	SQLAlchemy, extensions, Werkzeug, Jinja2, Sinatra Rubyframework.