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

Date	03 November 2023
Team ID	Team 591668
Project Name	Deep Learning Fundus Image Analysis For Early Detection Of Diabetic Retinopathy
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

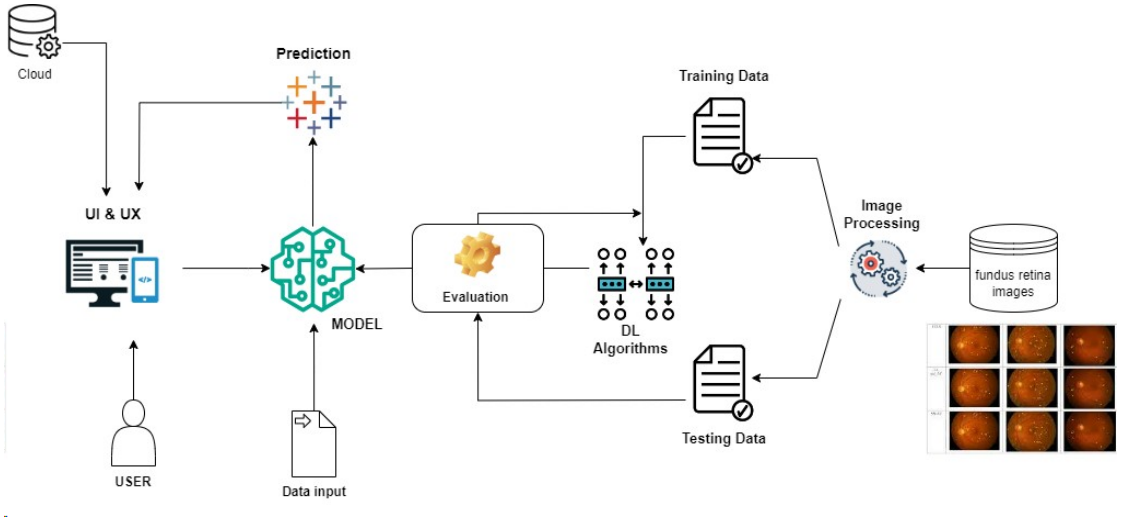

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	Data Preprocessing	Python, Numpy
3.	Application Logic-2	Creating cnn model	Necessary Python LIbraries
4.	Application Logic-3	Web application	Flask
5.	Database	Fundus Images(jpeg, jpg, png etc)	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	Keras	Amazon Rekognition API,
9.	Deep Learning Model	Transfer Learning techniques like Inception V3,Resnet50,Xception V3	transfer learning method in medical image analysis and they are highly effective.
10.	Infrastructure (Server / Cloud)	Application Deployment on Cloud Server Configuration :	Flask- A python WSGI HTTP server

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Flask	Technology of Open Source framework
2.	Security Implementations	CSRF Protection,Secure Flag For Cookies	SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	3 – tier, Micro-services	Micro Web Application by Flask.
4.	Availability	use of load balancers(ALB), distributed servers etc	Application Load Balancer. Werkzeug,Jinja2,Sinatra Ruby Framework
5.	Performance	Orm-Agnostic, Web Framework,Wsgi 1.0 Compliant, Http Request Handling Functionality High Flexibility	SQLAlchemy,Extensions, Werkzeug,Jinja2,Sinatra Ruby Framework