PROJECT DESIGN PHASE – II

TECHNICAL ARCHITECTURE

Date	November 6, 2022
Team Id	PNT2022TMID38219
Project Name	Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy

Reference: https://careereducation.smartinternz.com/saas-guided-project/3/deep-learning-fundus-image-analysis-for-early-detection-of-diabetic- retinopathy

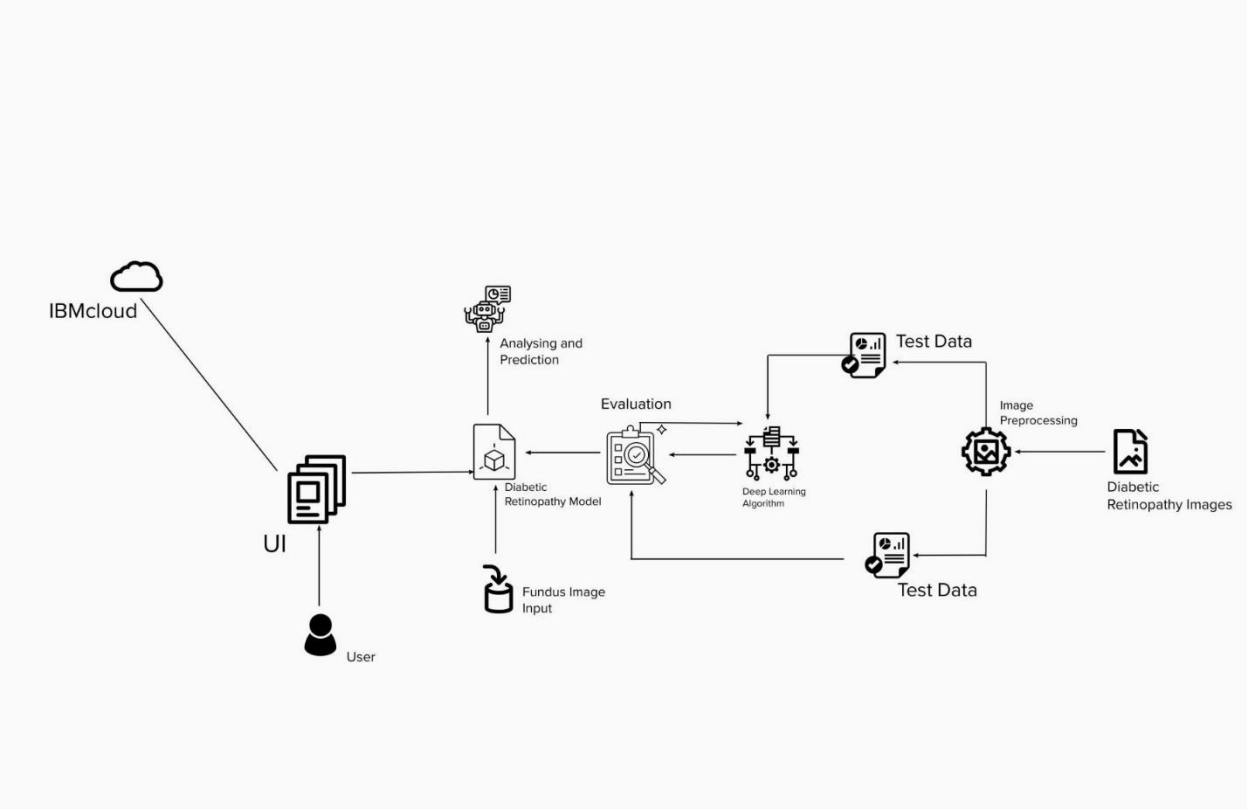

Table-1: Components & Technologies:

S.NO	Component	Description	Technology
1.	User Interface	Web UI	HTML, CSS, JavaScript, Python
2.	Application Logic-1	Data Preprocessing	Keras, Tensorflow, Numpy (Importing Essential Libraries)
3.	Application Logic-2	CNN Model Creating	Keras,Tensorflow,Numpy(Importing Essential Libraries)
4.	Application Logic-3	Web Application (UI)	Flask
5.	Database	Images (Jpeg, PNG, Jpg, etc..,)	Upload Folder
6.	File Storage	File Storage requirements	IBM Cloud Storage
7.	External API	Keras	Image preprocessing API
8.	Deep Learning Model	Inception v3Architecture	Pretrained convolutional neural network model that is 18 layers deep.
9.	Infrastructure (Server / Cloud)	Application Deployment on Webserver	Flask – A python WSGI HTTP server

Table-2: Application Characteristics:

S.NO	Characteristics	Description	Technology
1.	Open-source Frameworks	Flask	Werkzeug, Jinja2, Sinatra Ruby framework
2.	Security Implementations	CSRF protection secure flag for cookies	Flask-WTF, SESSION_COOKIE _SECURE
3.	Scalable Architecture	Micro Services	Micro web application framework by Flask
4.	Availability	Development server and fast debugger. Support for unit testing. RESTful request. Dispatching Jinja2 template Unicode.	Werkzeug, Jinja2, Sinatra Ruby framework
5.	Performance	ORM- agnostic, web framework, WSGI 1.0 complaint, HTTP request handling functionality high flexibility	SQLAlchemy, extensions, Werkzeug, Jinja2, Sinatra Rubyframework

References:

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/