Project Design Phase-I
Proposed Solution Template

Date	24 September 2022
Team ID	PNT2022TMID00519
Project Name	Project – Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	To build a Deep learning model that will extract basic features which can help us in identifying diabetic retinopathy in its early stages. This deep learning system helps in rectifying the damage caused to the blood vessels of the light sensitive tissue at the back of the eye(retina). This method is capable of processing retinal fundus images for early detection of diabetic retinopathy and its degree which also improves the model accuracy.
2.	Idea / Solution description	To accomplish this, the first step is to create Train and Test path folders and then the second step is the image preprocessing in which Import the image data generator library and apply image data generator functionality to Trainset and Testset. The third step is Model Building in which Import the model building Libraries, Adding Flatten layers then Adding Output Layer then Creating Model Object then Configure the Learning Process then Train,Save,Test The Model. Step four is Cloudant DB in which Register & Login to IBM Cloud then Create Service Instance and Credentials then Launch Cloudant DB then Create Database. The last step is Application Building in which Building HTML Pages then Build Python Code finally Run The Application
3.	Novelty / Uniqueness	- Deep Learning based Diabetic retinopathy detection. - Image processing
4.	Social Impact	A deep learning system could increase the cost effectiveness of screening and diagnosis, while attaining higher than recommended performance, and the system could be applied in clinical examination requiring finer grading.
5.	Business Model	This can be made as subscription and then doctors can pay for this software by monthly or yearly basis.

6.	Scalability of the Solution	It allows the doctor to accurately identify the severity grades of diabetic retinopathy and macular edema using the high resolution and quality images.