Project Design Phase-I
Proposed Solution

Date	5 October 2022
Team ID	PNT2022TMID03873
Project Name	**Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy**
Maximum Marks	2 Marks

Proposed Solution :

Project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Analyzing a fundus picture can help identify diabetic retinal disease early. ● To determine whether or not DR is present. ● To analyse the level of DR.
2.	Idea / Solution description	Specify validation data to validate the network at regular intervals throughout training. Select a Validation Frequency setting that allows the network to be validated once every epoch. Set the Plots training option to "training progress" to plot training progress while training. Finally, save the file for data testing. DCNNs' strength is their layering. A three-dimensional neural network is used by a DCNN to process the Red, Green, and Blue parts of a picture simultaneously. This significantly lowers the quantity of artificial neurons required to process an image in comparison to conventional feed forward neural networks. In order to train a classifier, deep convolutional neural networks are fed images. The network makes use of a mathematical technique called "convolution" instead of matrix multiplication. The four stages of a convolutional network's architecture are convolution, pooling, activation, and fully connected.
3.	Novelty / Uniqueness	On the basis of the level of DR performed during analysis, a class-based classifier will be provided. As part of the effort, we'll also test out a transfer learning strategy that has the potential to be very successful and lead to improved performance
4.	Social Impact / Customer Satisfaction	People who lose their vision could actually benefit from this and live. Early analysis and detection of DR is vital for minimising societal

		impact because it can help patients keep their eyesight.
5.	Business Model (Revenue Model)	- Doctors can analyse and identify DR using this model, in which it functions as a service model for public hospitals and a business model for private hospitals - Even exporting it to other nations who require it can work as a business strategy
6.	Scalability of the Solution	Accurate estimates and widespread use. Based on the accurate diagnosis's times. Availability.We will be able to detect DR with greater accuracy thanks to this technology than we currently are.Additionally, it can yield results that outline the stages of diabetic retinopathy.