PROJECT DESIGN
PHASE-I PROPOSED
SOLUTION

Date	16 October 2022
Team ID	PNT2022TMID24494
Project Title	Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy

PROPOSED SOLUTION:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Diabetes is a globally prevalent disease that can cause visible microvascular complications such as diabetic retinopathy in the human eye retina, the images of which are today used for manual disease screening and diagnosis. This labor-intensive task could greatly benefit from automatic detection using deep learning techniques.
2.	Idea / Solution description	Here we present a deep learning system that identifies referable diabetic retinopathy comparably or better than presented in the previous studies, although we use only a small fraction of images (less than 1/4th) in training but are aided with higher image resolutions.
3.	Novelty / Uniqueness	One of the most important decisions had to be made is which programming language can be used for satisfying our goal for extracting knowledge from our data. The suitable programming language is Python. Because it has a lot of tools and framework to create a strong ANN.
4.	Social Impact / Customer Satisfaction	This may help the Diabetic patient to detect DR in early stages by health camps and in regular interval of checkup with their retinal images.
5.	Business Model (Revenue Model)	Can be collaborated with the Diabetics Diagnosis center for regular check up. Government camps and NGO healthcare camps can be conducted for awareness.
6.	Scalability of the Solution	Can also detect if the patient is affected by Glaucoma or not, since both the tests make use of the same fundus image.