Project Design Phase-II
Solution Requirements
(Functional & Non-functional)

Date	04 November 2022
Team ID	PNT2022TMID20861
Project Name	Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy.
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Identifying the population eligible for screening and selecting dataset	Determine the group to be screened based on best evidence and use registers to make sure people's details are collected and up to date. It is necessary to select the appropriate dataset to enhance the model's performance.
FR-2	Invitation and information	Invite the full cohort for screening, supplying information tailored appropriately for different groups to enable informed choice to participate
FR-3	Analysis	It should analyze the medical condition [DR] in order to predict/detect the disease accurately.
FR-4	Diagnosis	The training should ensure proper diagnosis and make sure to identify the true and false of the medical condition

FR-5	Training	Collect the dataset related to the DR fromsource and Train the Model from the dataset for prediction.
FR-6	Testing	Test the model for prediction with different data to ensure it has trained well to predict/detect the medical condition
FR-7	Intervention /Treatment	Intervene/treat cases appropriately; in some conditions, surveillance or follow up will also be required. The testing of the model gives us the level of the medical condition so that we can go for the required treatment.
FR-8	Reporting	Collect, analyze and report on outcomes to identify false negatives and improve effectiveness and cost effectiveness of screening programme

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

NFR No.	**Non-Functional Requirement**	**Description**
NFR-1	Usability	The product must be easily usable by any type of users (literate and illiterate), the people how are old and affected by DR can also use this tool for Diagnosis. Assuring that a software can effectively perform one or more defined functions.
NFR-2	Security	Data security is important to store the customer data in the secured manner. The information should not be leaked outside.

NFR-3	Reliability	There is a chance of hardware failure or false positives when the testing data is more of different than the training dataset. It will process the images more quickly, so that we can process the more number of images within the limited time.
NFR-4	Performance	This will give more than 98% accuracy. The performance of the model is meant to give speedy results for the patients.
NFR-5	Availability	It can be made available across the earth using network connection. It can be made affordable for poor. Quality, and accessibility is made easier using this technology.
NFR-6	Scalability	It can be developed further to detect Diabetic macular Edema and glaucoma diseases. The product must hold stable even when multiple users are using it at the same times.