**Project Design Phase-I**
**Proposed Solution**

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| Date | 02 November 2023 |
| Team ID | Team-591668 |
| Project Name | Deep Learning Fundus Image Analysis For Early Detection Of Diabetic Retinopathy |
| Maximum Marks | 2 Marks |

**Proposed Solution :**

| S.No. | Parameter | Description |
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| 1. | Problem Statement (Problem to be solved) | Developing an automated deep learning system for the early detection and grading of diabetic retinopathy in retinal fundus images. |
| 2. | Idea / Solution description | ➢ Advanced deep learning-based system that utilizes convolutional neural networks (CNNs) and image processing techniques to analyze retinal fundus images for the detection and classification of DR.<br>➢ The solution aims to provide an automated, accurate, and efficient tool for the early detection and classification of diabetic retinopathy. |
| 3. | Novelty / Uniqueness | Transfer Learning techniques like Inception V3,Resnet50,Xception V3 that are more widely used as a transfer learning method in medical image analysis and they are highly effective. |

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| 4. | Social Impact / Customer Satisfaction | ➢ DR early detection and treatment can significantly reduce the risk of vision loss. The technology enables timely treatment, potentially saving patients' vision and reducing healthcare costs.<br>➢ This system promotes preventative care, enhances accessibility, and significantly improves healthcare outcomes. |
| 5. | Business Model (Revenue Model) | ➢ One time purchases and subscriptions can lead to better business strategy.<br>➢ Additional revenue comes from training, data insights, insurance collaborations, maintenance contracts, and tailored solutions, ensuring diverse income sources and market segment coverage. |
| 6. | Scalability of the Solution | This solution can grow in various ways: it can handle more images as they increase, reach more places like small clinics or remote areas, and fit into different healthcare systems easily. It can also adjust to specific needs and keep getting better over time, making it adaptable and able to expand smoothly. |