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

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| Date | 17 october 2022 |
| Team ID | IBM-Project-13274-1659515636 |
| Project Name | Project - Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

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

| S.No. | Parameter | Description |
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| 1. | Problem Statement (Problem to be solved) | Diabetic retinopathy is a state which is due to the damage of blood vessels of the retina. Considering the fact that Retina is the sensitive part it can result in blurry, less intense eye sight and it can also result in disappearing of eye sight. The diabetic retinopathy may cause no symptoms at In its earliest stages, They initial symptoms may be barely noticeable or mild. As time goes on, the state of this issue can worsen and lead to partial and then complete blindness to the individual which must be taken care of beforehand to get better at early stages. Thus early detection of the diabetic retinopathy is highly recommendable. |
| 2. | Idea / Solution description | This laser treatment, also known as focal laser treatment, can stop or slow the leakage of blood and fluid in the eye. During the procedure, leaks from abnormal blood vessels are treated with laser burns |
| 3. | Novelty / Uniqueness | Many deep learning models have emerged and put it in to use but CNN was used for image processing tasks. People who train and test in CNN will have large dataset and it really takes time. To tackle these kinds of difficulties, transfer learning uses a pre-trained model which already trained on variety of images that can be transferred to second related problem. The early detection of the DR will help the patients in the early stage itself rather than in the developed stage of the disease. The high accuracy that was attained by using transfer learning techniques and Convolutional Neural Network makes the project more reliable and efficient. |
| 4. | Social Impact / Customer Satisfaction | The success of telescreening and the management of diabetic retinopathy (DR) in communities depends on stakeholder |

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| | | satisfaction, including both individuals with diabetes and community health center (CHC) staff. |
| 5. | Business Model (Revenue Model) | Data analytics<br>Statistics<br>Future prediction |
| 6. | Scalability of the Solution | Our solution consists of an imaging device and software for automatic classification of measurements that will indicate if an individual has diabetic retinopathy, even when operated by a non-expert. |