**Project Design Phase-I**

**Proposed Solution**

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| Date | 27 September 2022 |
| Project Name | Project - Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy |
| Maximum Marks | 2 Marks |

**Proposed Solution:**

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| **S.No.** | **Parameter** | **Description** |
|  | 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. |
|  | Idea / Solution description | To avoid complication due to late identification of the disease, we develop a Deep learning system that can detect early-to-late stages of diabetic retinopathy by using Fundus images as dataset for training and testing the model. The deep learning models like Resnet-50, Alexnet, VGG16, Google-Net, U-Net are under study as of now. After completion of data pre-processing, the model will be trained and tested using the dataset Images. In this system we will integrate it with a user interface using flask. |
|  | Novelty / Uniqueness | Here we provide the result of the prediction input with the infected level stages of disease and also detect the early prediction of the disease. |
|  | Social Impact / Customer Satisfaction | This model can detect the level of diabetic retinopathy from early-to-late stages with all clinical grades of the customer. |
|  | Business Model (Revenue Model) | C:\Users\Akshaya Supriya\Downloads\3-Figure3.1-1.png  C:\Users\Akshaya Supriya\Downloads\stages(IBM_Project)images.jpg |
|  | Scalability of the Solution | This system model is probably more cost efficient than other screening test of the diabetic retinopathy. Also, the model is scalable from the architecture and dataset training perspective. |