**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

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| Date | 03 October 2022 |
| Team ID | PNT2022TMID20392 |
| Project Name | Project - 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.

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| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | User Registration | Registration through Gmail |
| FR-2 | User Confirmation | Confirmation via Email |
| FR-3 | Input specification | Fundus image of retina of the patients |
| FR-4 | Product explanation | Identifies the issue at the early stage of the patient.  The deep learning model is trained and loaded, then a webpage is designed and connected to the defined deep learning model. |
| FR-5 | Prediction process | Classification of the input image using the trained deep learning model which is already connected with the web UI |
| FR-6 | Output Specification | Output with all clinical grades of the diabetic retinopathy from early-to-late stages |
| FR-7 | User requirements | Due to early stage prediction the risk of visual loss and blindness can be prevented by the proper treatment as soon as possible |

**Non-functional Requirements:**

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

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| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | Webpage can be accessed by the specified users assigned by the administrator |
| NFR-2 | **Security** | Authentication can be assigned only by the administrator |
| NFR-3 | **Reliability** | If errors or bugs are identified the page reload option solves the issue |
| NFR-4 | **Performance** | The output specifies the stage of disease and the model will provide specific output even for the early stage input image |
| NFR-5 | **Availability** | Quality of output and accessibility of the model is probably more efficient |
| NFR-6 | **Scalability** | This system model is probably more cost efficient than other screening test of the diabetic retinopathy |