**Project Design Phase-II**

**Data Flow Diagram & User Stories**

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| Date | 08 October 2022 |
| Team ID | PNT2022TMID09991 |
| Project Name | Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy |
| Maximum Marks | 4 Marks |

**Data Flow Diagrams:**

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

**START**

**DIABETIC RETINOPATHY SCREENING**

**PRE-PROCESSING**

**FEATURE EXTRACTION**

**DETECTION**

**STOP**

**FUNDUS IMAGES**

**RETINAL FUNDUS IMAGE DATASET**

**DISEASE CLASSIFICATION STAGE/LEVEL**

**DATA FLOW DIAGRAM:**

**USER STORIES**

| **User Type** | **Functional Requirement (Epic)** | **User Story Number** | **User Story / Task** | **Acceptance criteria** | **Priority** | **Release** |
| --- | --- | --- | --- | --- | --- | --- |
| Customer (Mobile user) | Registration | USN-1 | As a user, I can check whether I have Retinopathy or not by uploading my eye image and other details. | I can upload or take image. | High | Sprint-1 |
|  | Physical feature | USN-2 | As a user, I can use it with minimal physical interaction with the corresponding device. | I can take the device to the residence of patients if they are unable to visit hospital. | High | Sprint-2 |
|  |  | USN-3 | As a user, I can find the method more efficient and accurate. | It prevents the chances of unwanted infections in the patient’s eye | High | Sprint-1 |
|  | Screening method | USN-4 | As a user, I can find it portable and easy to use. | I can perform the screening procedure without any fear and hesitation. | Low | Sprint-2 |
|  | Safety | USN-5 | As a user, I should be safe as the detection method is free from radiations. | Pain during the testing is the major fear factor that prevents the patients from visiting the hospital. | High | Sprint-4 |
|  | Testing | USN-6 | As a user, I can undergo testing without any fear of pain as this method is pain free. | Pain during the testing is the major fear factor that prevents the patients from visiting the hospital. | Medium | Sprint -2 |
|  |  | USN-7 | As a user, I will be comfortable as it requires minimum/ no human involvement. | The screening is carried out using a computer robot along with the aid of AI technology. | Low | Sprint-4 |
| Common User | Dashboard | USN -8 | As a user, I receive the severity of the retinopathy. | The severity of the disease should be categorized. | Medium | Sprint-2 |
|  | Results | USN-9 | As a user, I can rely on the results without any suspicion. | The technique is almost 100% efficient as it involves modern techniques incorporated with Machine Learning and Deep learning. | High | Sprint-3 |
|  |  | USN-10 | As a user, I get the benefit from the result as it will help me know whether treatment is necessary or not. | It can prevent me from vision loss. | High | Sprint-1 |
|  |  | USN-11 | As a user, I can get the results immediately after the screening process. | It prevents further delay in the right treatment process. | Low | Sprint-4 |
| Customer (Public sector/ Private sector) | Cost efficiency | USN-12 | As a user, I can reach many people suffering from diabetes. . | Diabetic patients are more vulnerable to diabetic retinopathy | Medium | Sprint-1 |
|  |  | USN-13 | As a user, I can create awareness among diabetic patients to undergo frequent screenings. | As the technique is low cost, patients will find it very useful. | Low | Sprint-3 |
|  | Results | Usn-14 | As a user, I can complete the screening procedure within minutes for a single patient. | The random results generated by the device saves time. | High | Sprint-2 |