**Project Design Phase-II**
**Data Flow Diagram & User Stories**

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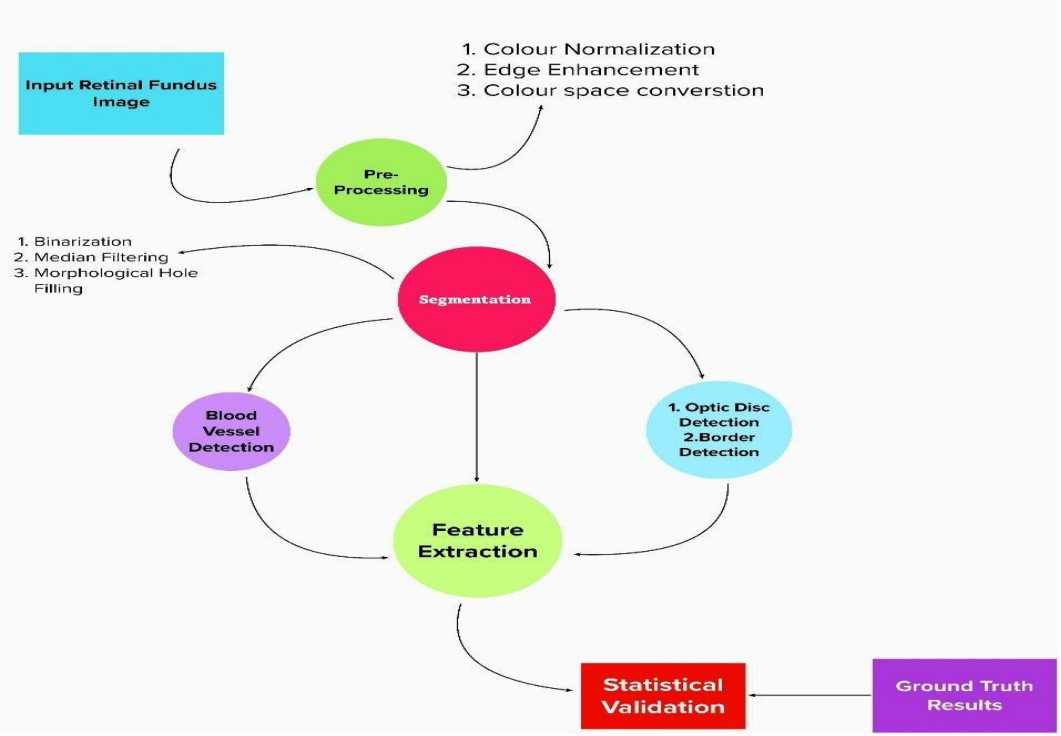
| Team ID | PNT2022TMID20861 |
| Project Name | Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy |
| Maximum Marks | 4 Marks |

**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.



- The retinal fundus images are commonly used for detection and analysis of diabetic retinopathy disease in clinics.
- Pre-processing of raw retinal fundus images are performed using extraction of green channel, histogram equalization, image enhancement and resizing techniques.
- The segmentation of retinal vasculature from eye fundus images is a fundamental task in retinal image analysis.
- The computer aided automatic detection and segmentation of blood vessels through the elimination of optic disc (OD) region in retina.
- The retinal blood vessels are detected using mathematical binary morphological operations.
- Feature extraction from the fundus images for the diagnosis of Diabetic Retinopathy refers to an advanced eye screening technology by which eye related diseases can be detected at an early stage.

**User Stories**

| User Type | Functional Requirement (Epic) | User Story Number | User Story / Task | Acceptance criteria | Priority | Release |
|---|---|---|---|---|---|---|
| Patient (Web user) | Registration | USN-1 | As a user, I can register through website either email id or phone number with password. | I can create my account. | High | Sprint-3 |
| | Login | USN-2 | As a user, I can login to the site by the given Login credentials. | I can login and access my account. | High | Sprint-3 |
| | Upload image | USN-3 | As a user, I can upload my data in the form of pdf, doc etc. | I can upload my data's. | Medium | Sprint-3 |
| Administration (Web developer) | Admin login | USN-4 | As an Admin I can login to the site and analyse the user data. | I can login and analyse the user data. | High | Sprint-3 |
| | Data collection | USN-5 | As an admin, I can collect the dataset related to the DR from source. | I can collect the dataset. | Low | Sprint-1 |
| | Create model | USN-6 | As an admin, I can create the model and train the model from the dataset for prediction. | I can create and train the model. | High | Sprint-1 |
| | Test the model | USN-7 | As an admin, I can test the model for prediction. | I can test the model. | High | Sprint-2 |
| Patient (Web user) | Diagnosis | USN-8 | As a user I can get the diagnosis result on the application and follow up with treatments. | He/she can get the results and continue the treatment. | High | Sprint-2 |