Project Design Phase-II

Data Flow Diagram & User Stories

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Date	22 October 2023
Team ID	Team-592792
Project Name	Deep Learning Model for Eye Disease Prediction
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 rightamount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

Flow in the Model:

1. Data flows from the "Data Source" cluster to the "Data Preprocessing" cluster, where it undergoes preprocessing to prepare it for model training.
2. The pre-processed data then flows to the "Model Training" process, where the deep learning models are trained using this data.
3. The trained model can be used for disease prediction by importing it into the application. It's represented by the "Model Deployment" cluster.
4. Separate evaluation data is used in the "Model Evaluation" process to assess the model's accuracy.
5. Once the model is ready and evaluated, it can be deployed from the "Model Deployment" cluster, making it accessible to users.
6. Users interact with the deployed model through the "User Interaction" process, where they submit their retina images for classification.

Data Flow Diagram :
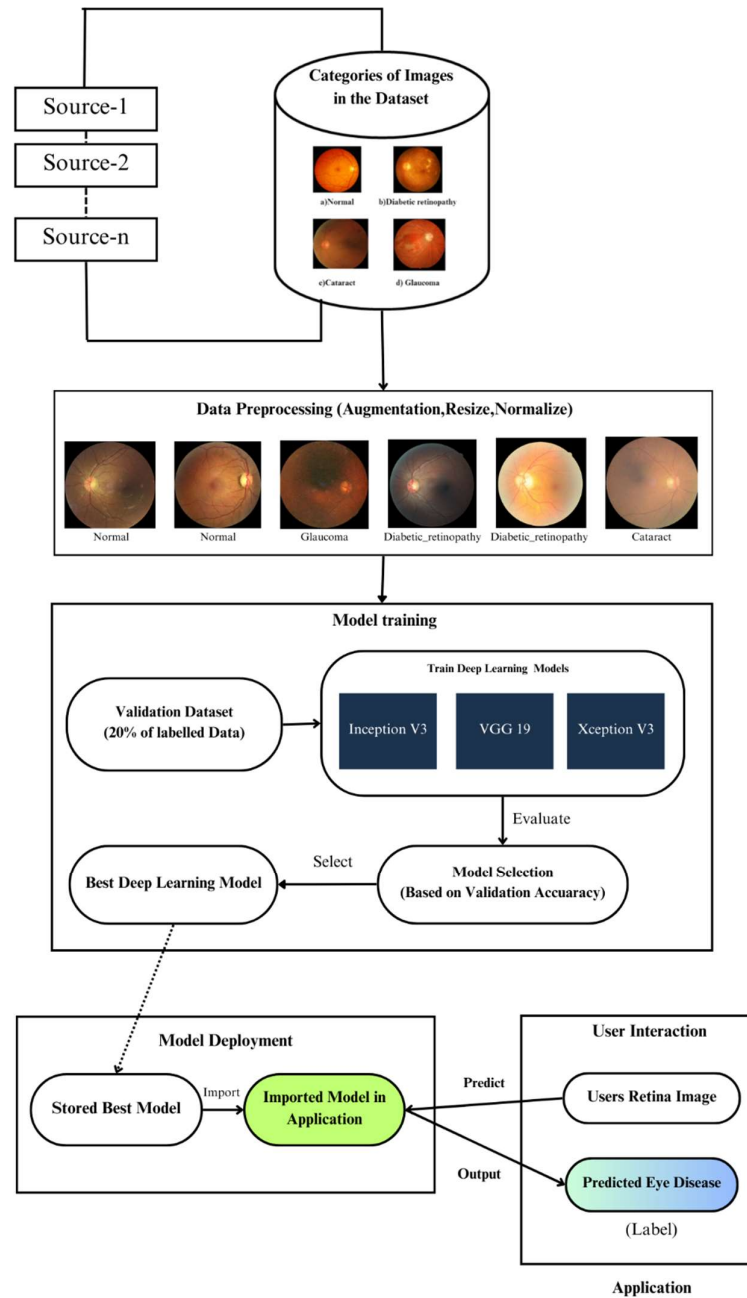
User Stories:

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Ophthalmologists and Eye Clinics	Model Training and Evaluation	USN-1	Train a deep learning model using transfer learning techniques (e.g., Inception V3, VGG19, Xception V3) on a labeled dataset of eye disease images (Normal, cataract, Diabetic Retinopathy, and Glaucoma).	Model successfully trained with a high level of accuracy	High	Sprint-1
Healthcare Professionals (Ophthalmologists)	Model Integration	USN-2	Integrate the trained deep learning model into the clinical workflow of ophthalmologists for automatic eye disease diagnosis.	Model integrated into the existing software used by ophthalmologists	High	Sprint-2
Patients	Patient Data Collection	USN-3	Develop a mobile application for patients to capture and upload their eye images for diagnosis.	Mobile app allows patients to take and upload eye images	Medium	Sprint-3
System Administrators	Scalability and Server Setup	USN-4	Set up a scalable server infrastructure to handle the increasing number of patient requests and image uploads.	Server infrastructure should be able to handle concurrent requests and Implement load balancing to distribute traffic efficiently.	High	Sprint-4
Medical Researchers	Data Analysis and Insights	USN-5	Analyze the data collected through the system to gain insights into eye disease prevalence, demographic trends, and the effectiveness of the deep learning model.	Perform data analysis on the collected patient data and Generate reports on disease prevalence and demographics	Medium	Sprint-5
Regulatory Authorities	Compliance and Security	USN-6	Ensure that the system complies with medical data privacy and security regulations (e.g., HIPAA).	Conduct security audits and risk assessments and Implement encryption for data in transit and at rest.	High	Sprint-6
General Users	Awareness and Education	USN-8	Develop educational materials and resources for the general public to increase awareness of eye diseases and the importance of regular eye check-ups.	Create informative brochures, videos, or articles about common eye disease and promote the importance of early diagnosis and prevention.	Low	Sprint 7