Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	06 November 2023
Team ID	Team-593124
Project Name	Deep Learning Model for Eye Disease Prediction
Maximum Marks	4 Marks

Table-1 : Components & Technologies:

Component	**Description**	**Technology**
User Interface	Web interface for image input and prediction.	HTML, CSS, JavaScript
Application Logic	The logic that integrates the prediction results from the models and formats them for presentation on the UI.	Flask (Python Web Framework)
Cloud Database	Database service on cloud	Flask
File Storage	Storage for Image Uploads	Local Filesystem
Machine Learning Model	Deep learning algorithms, namely Inception V3, VGG16, and Xception V3, used for analyzing retina images and predicting eye diseases.	Inception V3, VGG16, Xception V3 (Deep Learning Algorithms)
Infrastructure (Server / Cloud)	The application is deployed on Heroku, which provides managed services, including server orchestration, deployment, and scaling.	Heroku (Cloud Application Platform)

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Utilized Flask, a lightweight and flexible Python web framework, to develop the web application interface for the eye disease prediction system. This framework enabled the creation of a user-friendly web interface for uploading retina images and displaying diagnostic results.	Python (Python Web Framework)
2.	Security Implementations	While specific advanced security measures have not been implemented, basic security practices inherent to Flask and web application development have been adhered to. This includes secure handling of user data and basic protection against common web vulnerabilities.	Basic Web Security Practices (Inherent in Flask)
3.	Scalable Architecture	Deployed on Heroku, a cloud platform as a service, to ensure scalability and ease of deployment. Heroku allows the application to handle varying loads with its dynamic scaling capabilities and simplifies the deployment process.	Heroku (Cloud Platform as a Service)
4.	Availability	No specific technology or methodology has been implemented solely for ensuring high availability. However, the choice of Heroku as a deployment platform indirectly contributes to availability through its reliable infrastructure and managed services.	Indirect Availability via Heroku Platform
5.	Performance	Implemented three cutting-edge deep learning algorithms (Inception V3, VGG16, Xception V3) to boost the accuracy and efficiency of eye disease prediction. These algorithms, renowned for high performance in image analysis, enhance diagnostic precision and speed.	Inception V3, VGG16, Xception V3 (Deep Learning Algorithms)

Technical Architecture: