Project Report

on

Curb The Virus- Plasma Bank & COVID Tracker Web App

Submitted in partial fulfilment for the award of

Post Graduate Electronic Diploma in Advance Computing

E-DAC

Guided By,

Prof. Ms. Kishori

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Introduction

Since the time SARS CoV-2 hit India last summer, there have been countless deaths and subsequently, countless attempts of developing vaccines or other methods to save lives. One of the promising treatments turned out to be Convalescent Plasma Transfusion therapy. A person affected by Covid-19 may be able to start building antibodies within, with the help of infusion of convalescent plasma, derived from a person fully recovered from Covid-19.

This treatment, even though proven effective to a satisfactory level, remains to be a relatively unorganized matter. Hence, paving the need of a centralized platform, to connect convalescent plasma seekers with willing donors, Curb The Virus web app aims to do exactly that.

This project is nothing but a web-based platform that lets both plasma seekers and willing plasma donors register themselves onto the platform. Then, plasma seekers can see a list of matching, available and eligible donors in their dashboards and then request to contact donors, which if accepted by the donors in their dashboards, will allow plasma seekers to contact donors. Both parties can then coordinate according to their schedules to make suitable arrangements, Curb The Virus web app provides an undertaking form to be signed by all parties using the platform before undergoing the plasma transfusion therapy. Thus, acting as a platform to help connect plasma seekers with willing donors.

Overview

- **Purpose**

  To create a web-based app that acts as a platform, people looking for convalescent plasma can find willing donors, and contact them to undergo the plasma transfusion process.

- **Scope**

  This web-based app is designed to;

  - Assist plasma seekers find willing donors by,
    - Registering on the platform, and creating a seeker profile.
    - Be able to see a list of willing, eligible and available donors near their geographical location.
    - Be able to send contact requests to donors.
    - Generate a legally binding undertaking form for their own safety, from a legal stand point
  - Assist plasma donors by,
    - Registering on the platform, and creating a donor profile.
    - Be able to see a list of contact requests sent by people seeking plasma donation from them, near their geographical location.
    - Be able to accept or reject the contact requests by seekers.
    - Generate a legally binding undertaking form for their own safety, from a legal stand point.
  - Enable Administrator to,
    - View users' (seeker/ donor) personal profiles, details.
    - Manually add, modify or delete user (seeker/ donor) profiles.

Feasibility

A feasibility study i.e., simply an assessment of the practicality of the proposed project was carried out, which took into account the economic, technical and operational factors and concluded that the proposed project was most certainly to be completed, and the finished product would be highly valuable to users.

- **Operational Feasibility**

The study concluded that since there is no such/ similar platform currently available at the moment, the project serves an important yet unattended problem.

As the primary goal since the inception of the project idea has been smooth, easy, visually pleasing user experience and a successful completion of their intended task, the project has met its primary expectation and will continue to be under development for further improvements.

- **Technical Feasibility**

The study concluded that the tech stack used to craft the project fetched the intended results, irrespective of the system/ platform the project was made to run on, the users' expectations were met.

- **Economic Feasibility**

As the tech stack used to craft the project is open source i.e., freely available, and is well maintained by the developer community, the cost of development was brought down to the minimal, without compromising the quality of the final product and ergonomics of the same were still maintained.

Project Description

- **Technology Stack**
  - **Back-end**

CATEGORY	TECHNOLOGY
Framework	Spring Boot
ORM Tool	Hibernate
Database	MySQL
Build Tool	Maven
Language	Java

  - **Front-end**

CATEGORY	TECHNOLOGY
JavaScript Library	React JS
Web Development	HTML
	CSS
	JavaScript

User Classes

- **Seeker**

  A seeker user class represents users who can:

  - Register on the platform, and create a seeker profile.
  - Be able to see a list of willing, eligible and available donors near their geographical location.
  - Be able to send contact requests to donors.
  - Be able to view, modify or delete their own profile.
  - Generate a legally binding undertaking form for their own safety, from a legal stand point

- **Donor**

  A donor user class represents users who can:

  - Register on the platform, and create a donor profile.
  - Be able to see a list of contact requests sent by people seeking plasma donation from them, near their geographical location.
  - Be able to accept or reject the contact requests by seekers.
  - Be able to view, modify or delete their own profile.
  - Generate a legally binding undertaking form for their own safety, from a legal stand point.

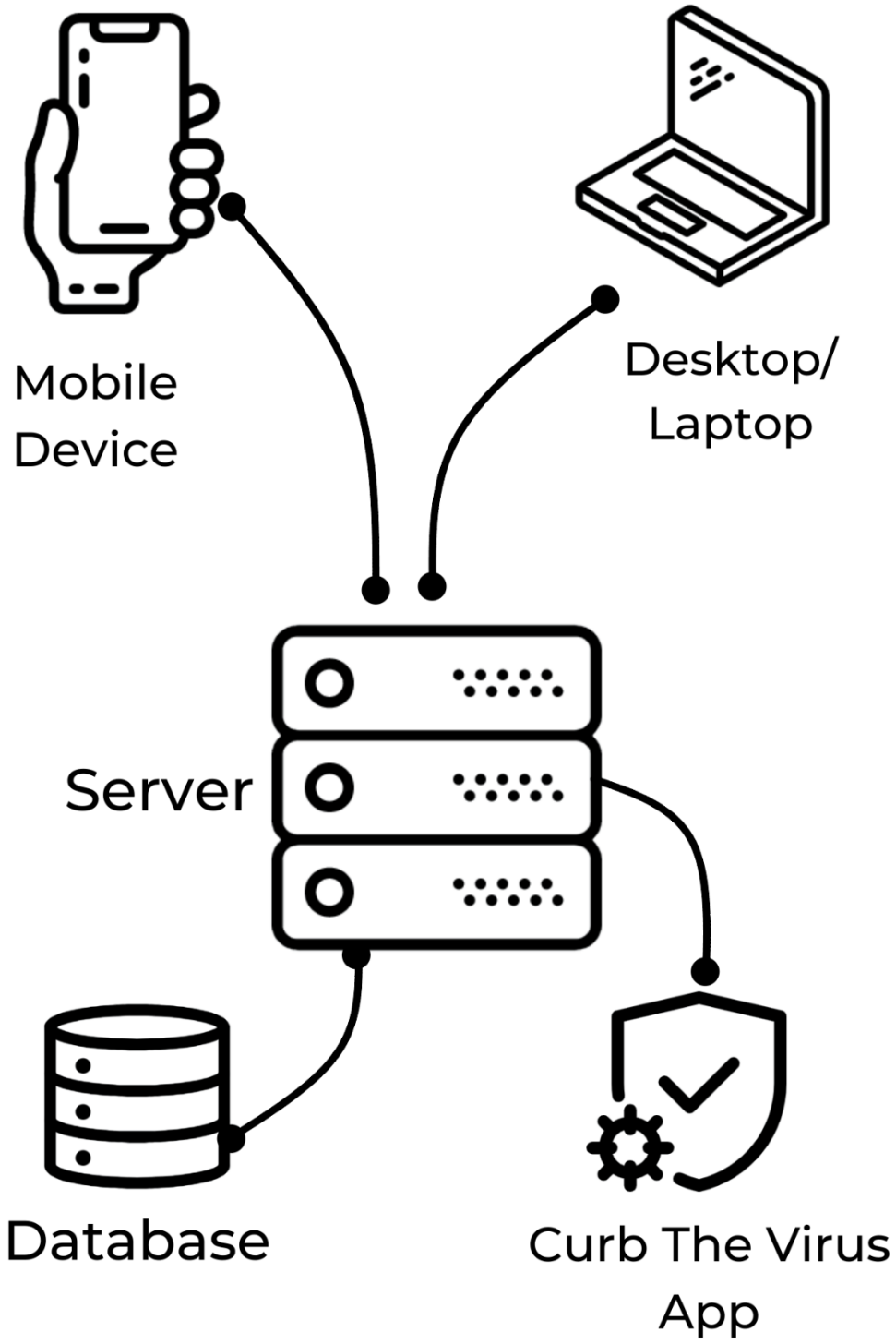
- **Administrator**

  An Administrator represents a class of user who has complete authority over other user profiles, except their own (which can be added/ modified/ deleted by developers).

  Administrators can:

  - View users' (seeker/ donor) personal profiles, details.
  - Manually add, modify or delete user (seeker/ donor) profiles.

General Project Environment



SRS Documentation

Requirements

Functional Requirements

Primary:

1. Plasma seekers can see number of available donors within a city/ specific geographical location.
2. Both donors & seekers can register themselves on the platform with a user profile.
3. Plasma seekers can request donors to grant permission to contact them.

Secondary:

1. Donors & seekers can modify their profiles according to their preferences.
2. Admin can generate legal paperwork and other documents for support/ compliance/ record keeping.

Technical Requirements

Primary:

1. Cross-browser/ platform support (Edge, Chrome, Firefox, Safari – PC and Mac).
2. Smartphone support.
3. Generation of pairs list based on criteria provided by admin.

Secondary:

1. Statistics and reporting ability.

Usability Requirements

Primary:

1 Contact (e-mail/ call) support must be provided.
1. Assistance in filling forms/ registration process to be provided.
2. Status check cycles must be designed and carried out time to time.

Secondary:

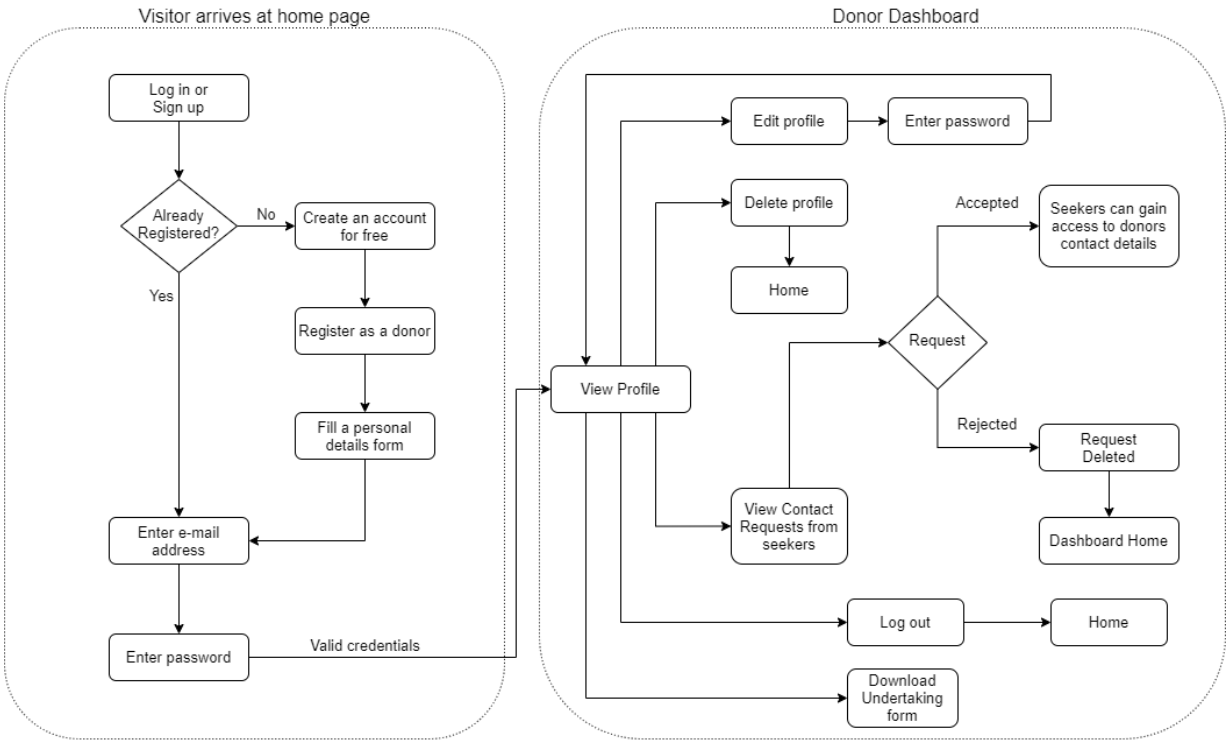
1. Complaints/ grievance/ feedback addressing systems to be created.

User Experience Flows (Process Sequences)

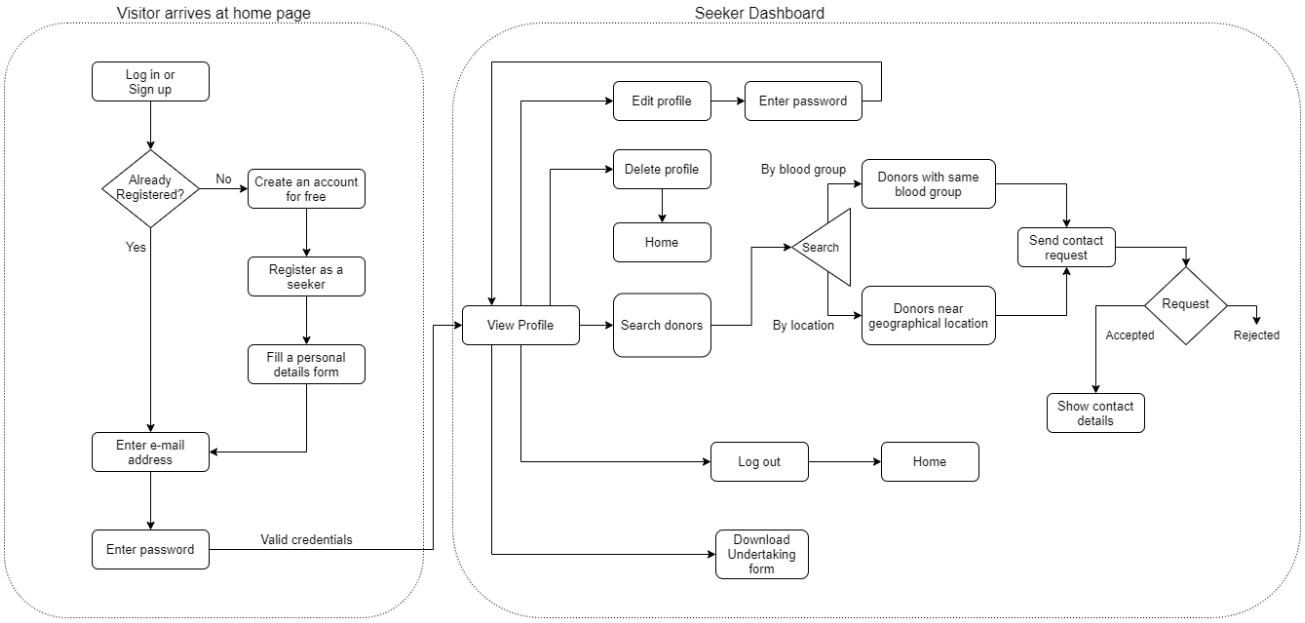
Visitors are greeted with a beautiful, clean and easy to read and simple to navigate interface with various menus. A “Log in/ Register” interface is crafted to allow users to register or log into their existing accounts.

Registering / logging in requires a valid e-mail address in combination with a password; which if forgotten, can be reset by contacting the admin via e-mail displayed on the contact us page.

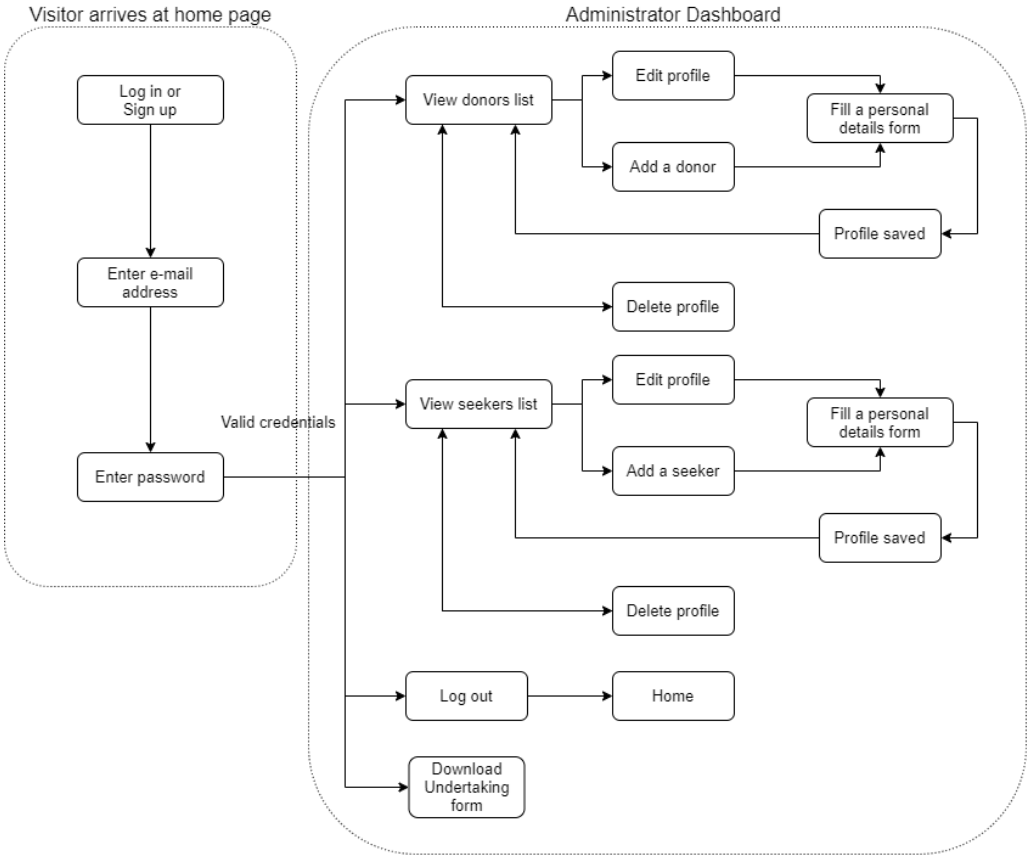
The entire sequence of use of the app by various users can be easily depicted by UX flow diagrams that follow.



Donor UX

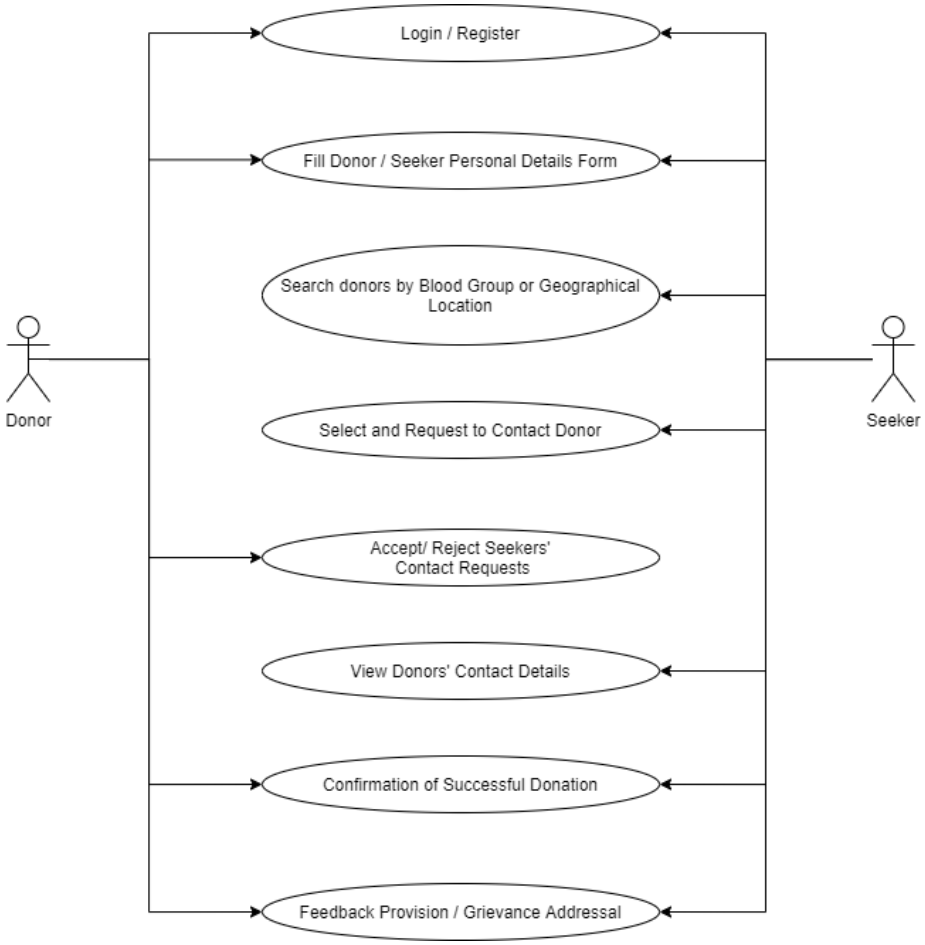


Seeker UX

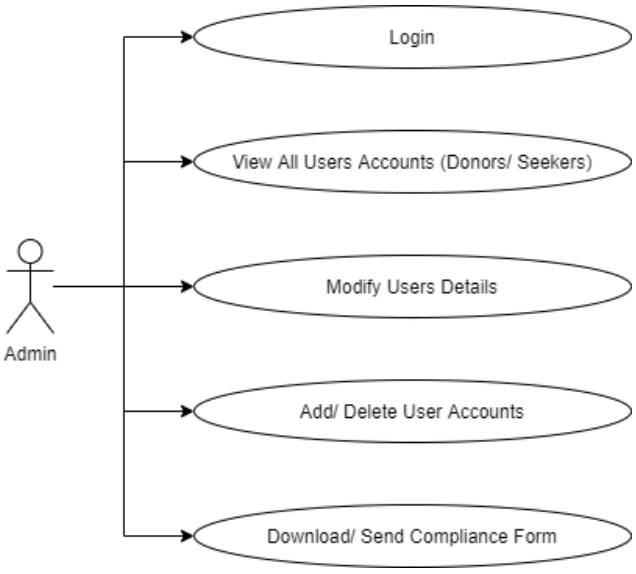


Administrator UX

Use Cases

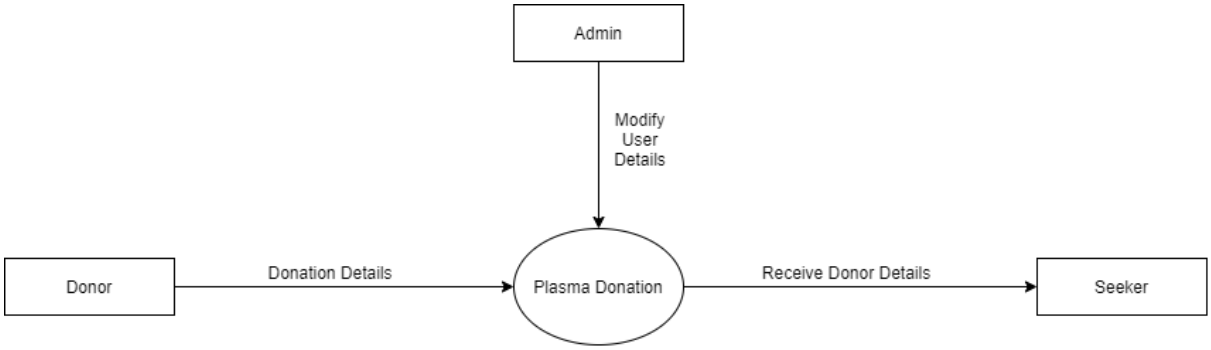


Donor/ Seeker

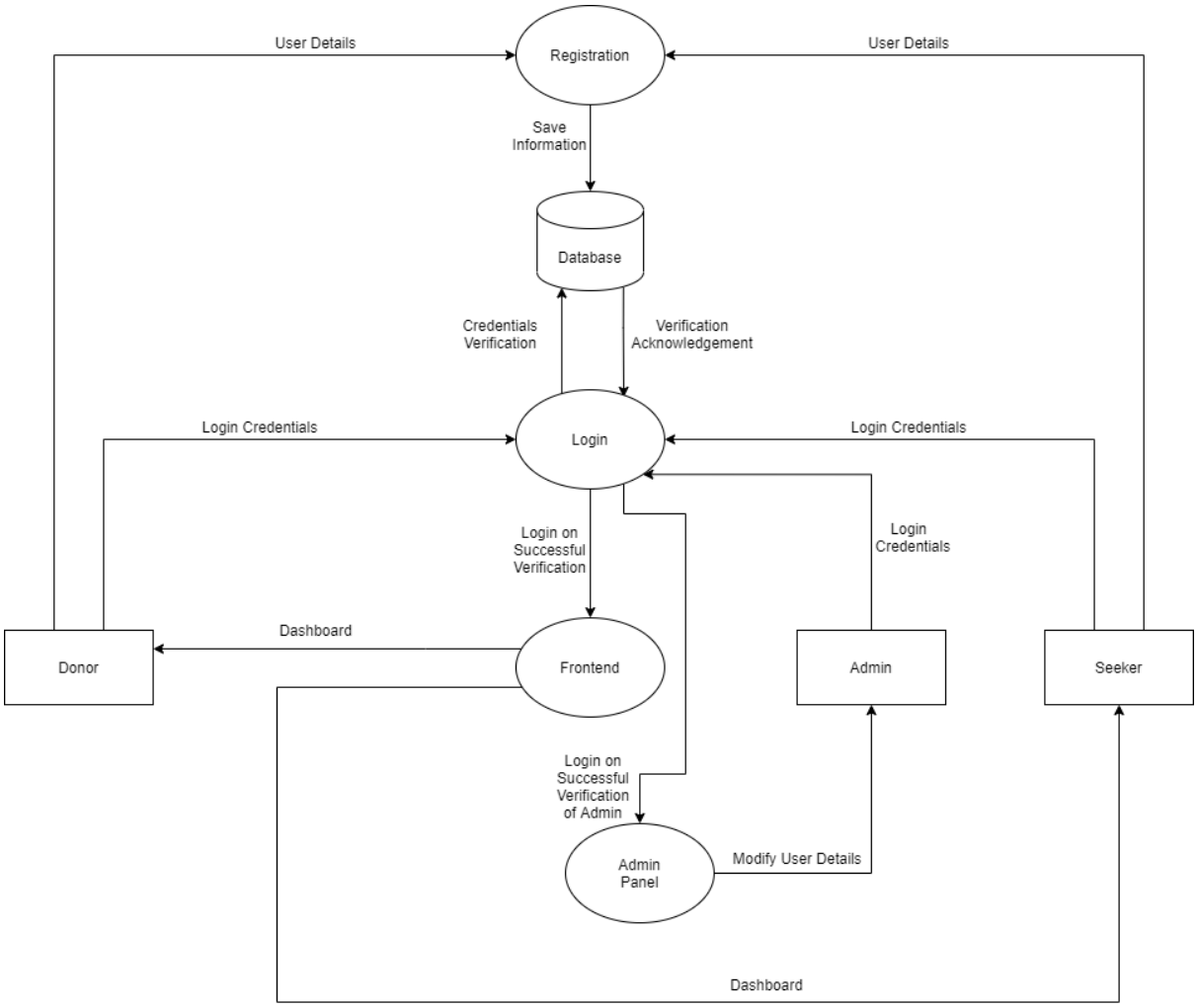


Administrator

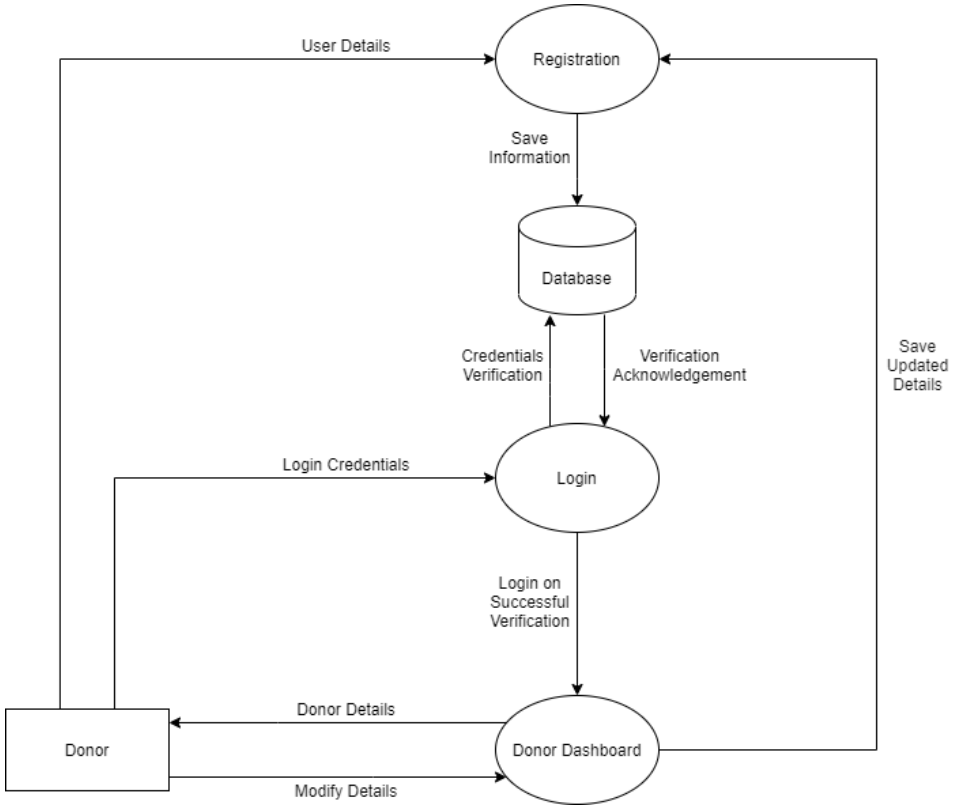
Data Flow Diagrams



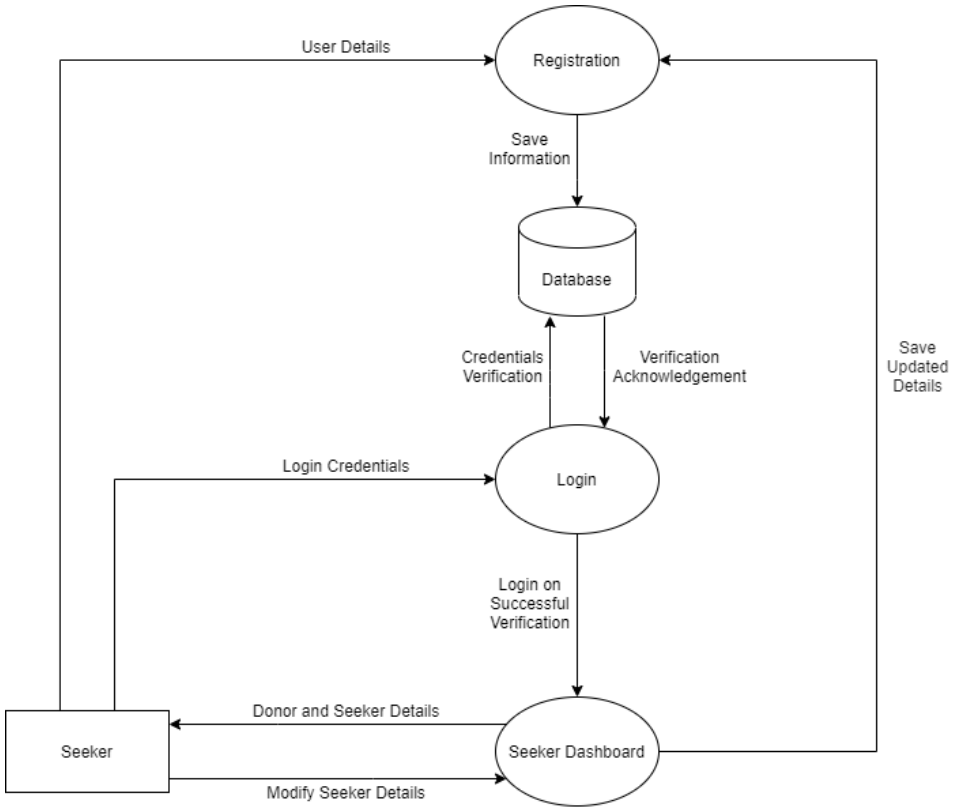
DFD Level_0



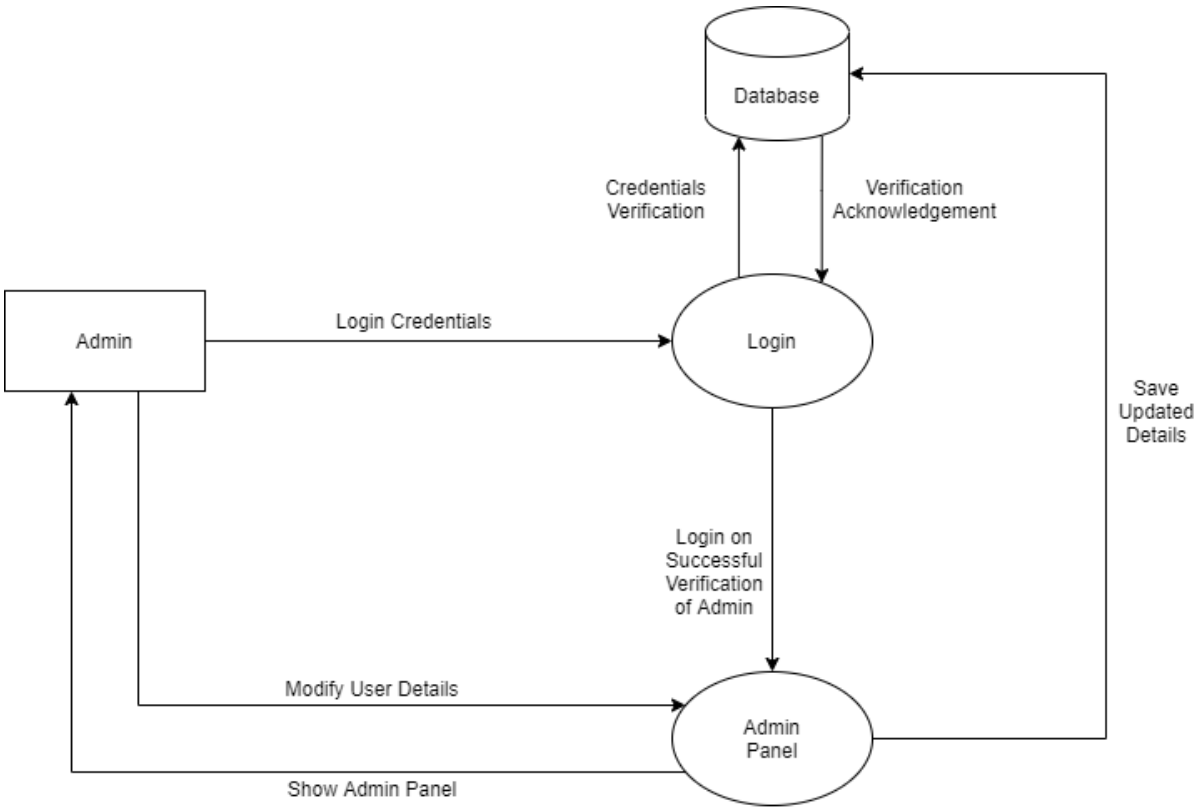
DFD Level_1



DFD Level_2 Donor

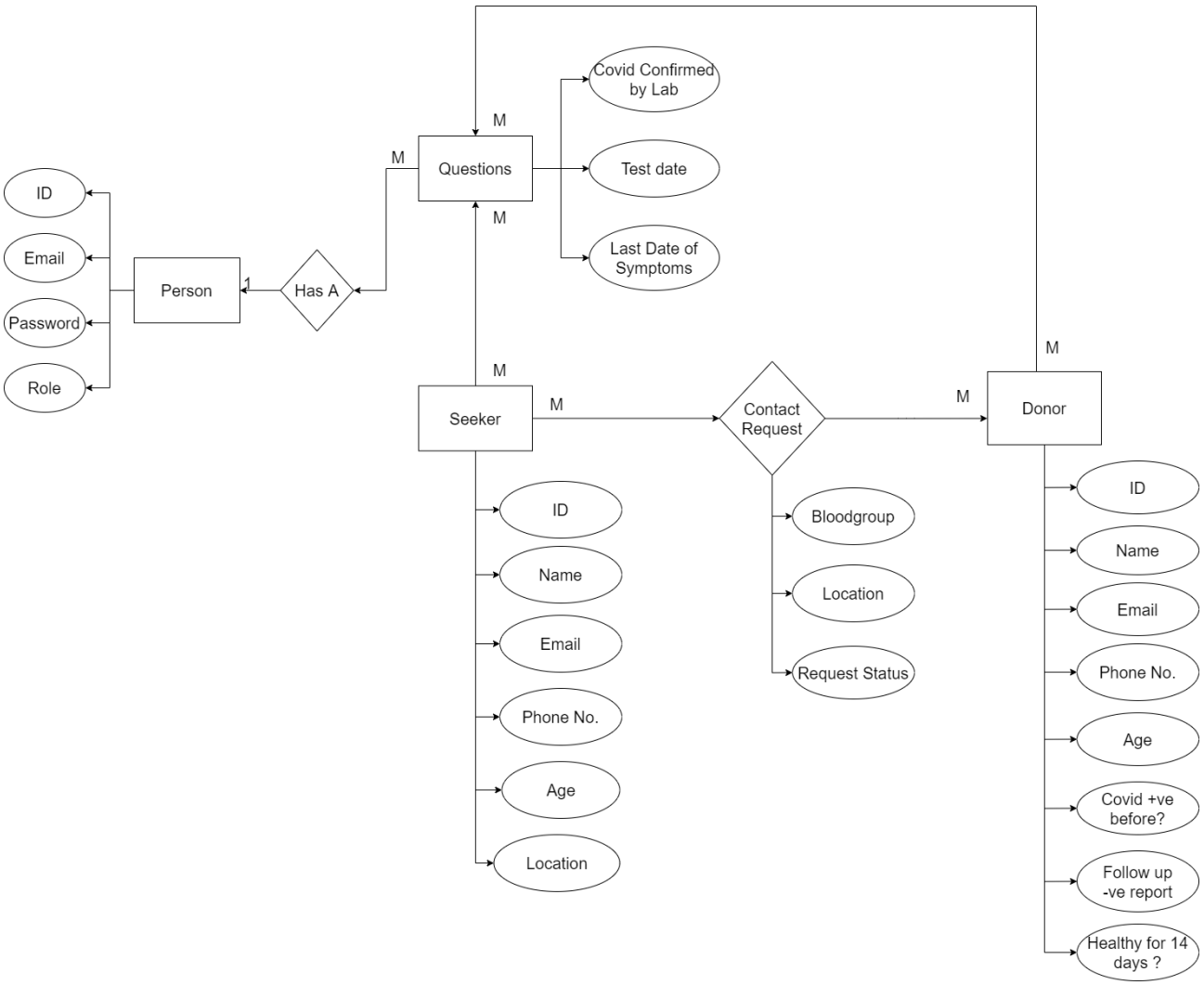


DFD Level_2 Seeker

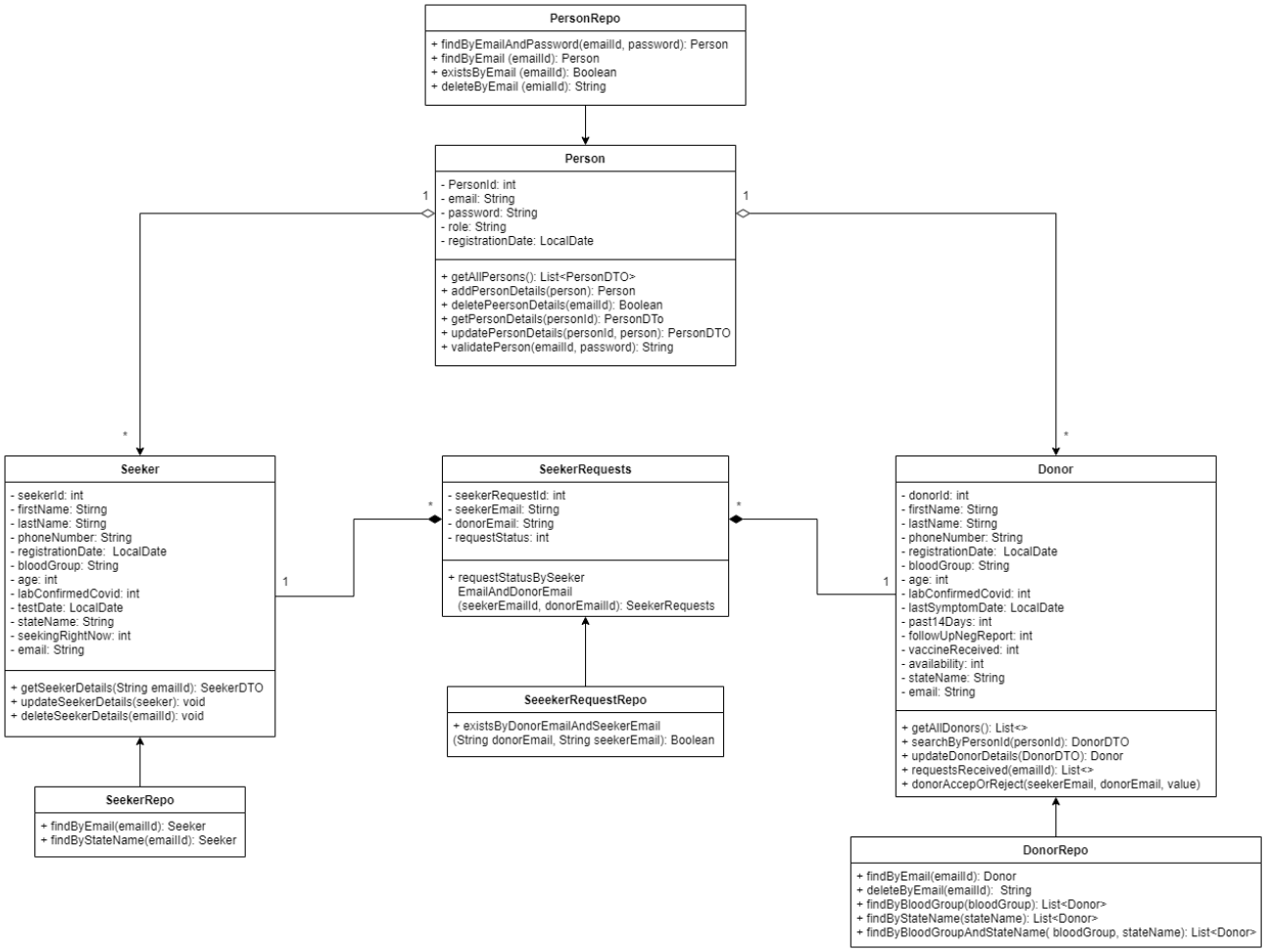


DFD Level_2 Administrator

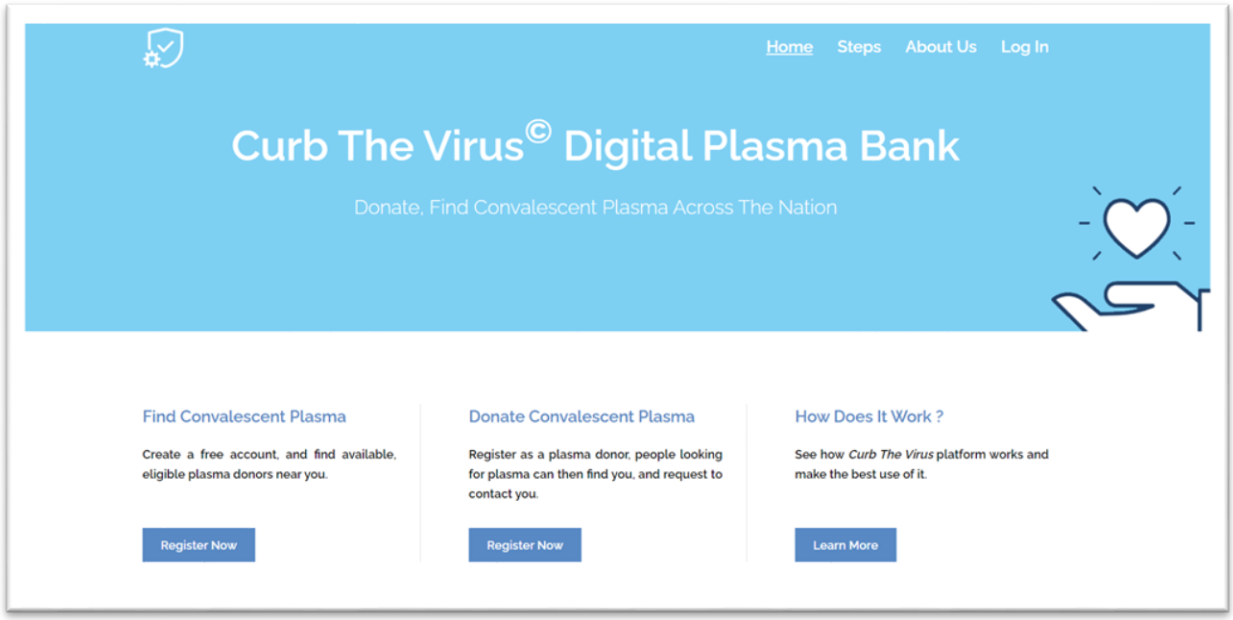
Entity Relations



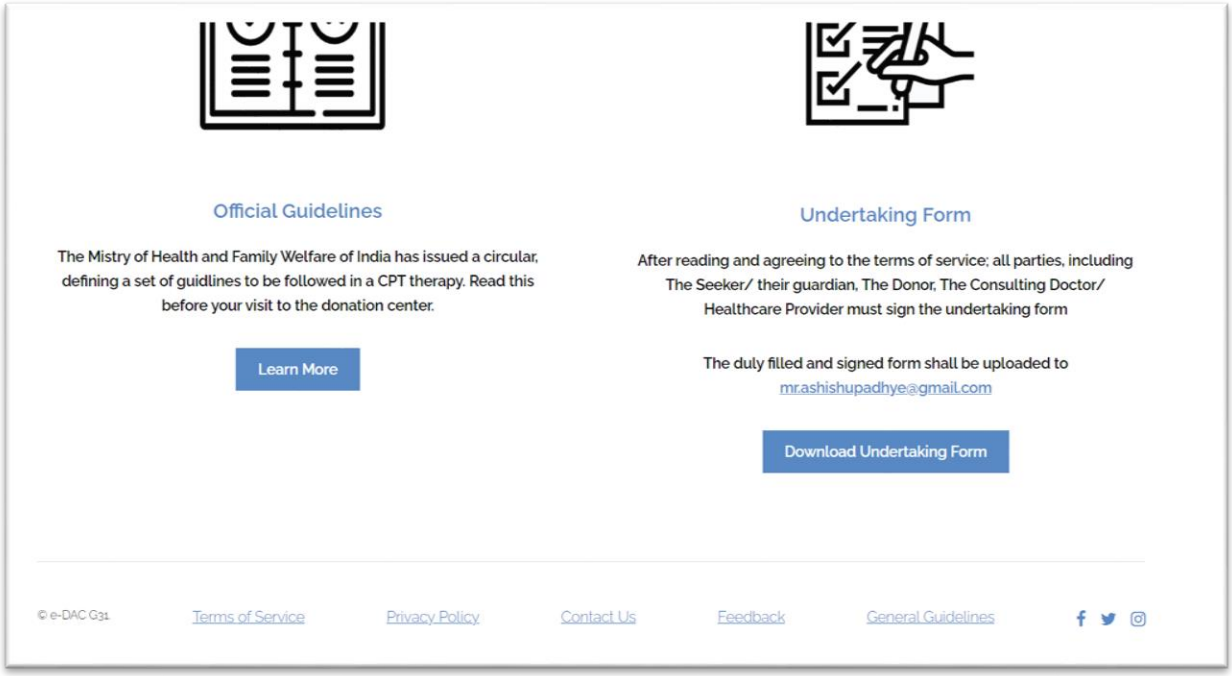
Class Diagram



A Peek Into The App

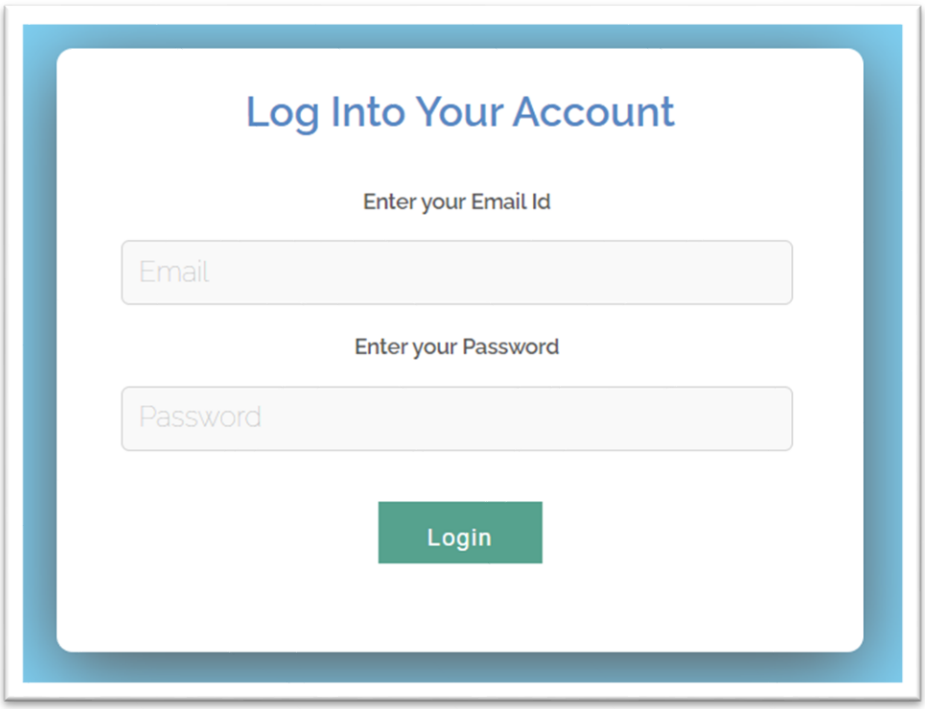


A beautiful home page

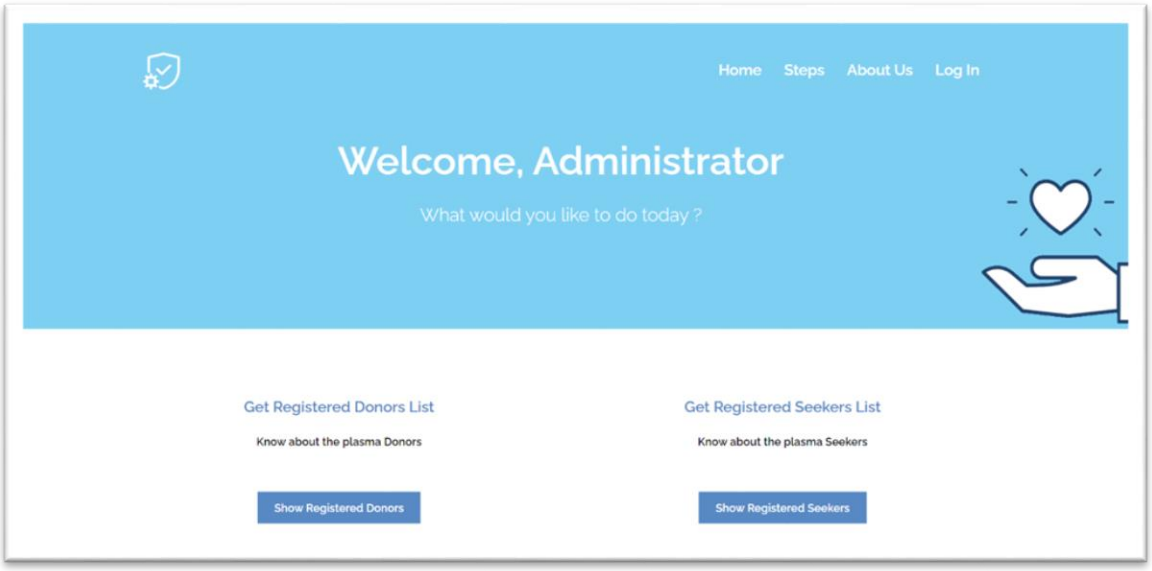


Informative and easy to access footer menus

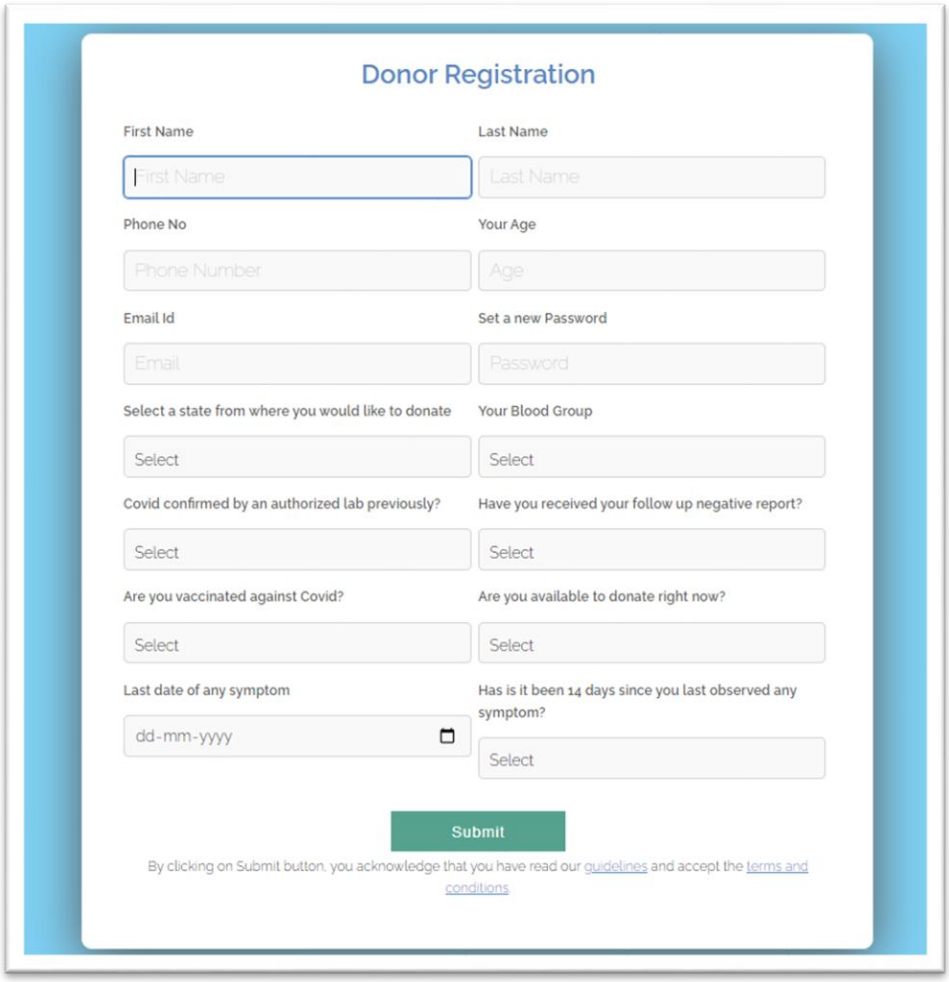
Explained: How the platform works



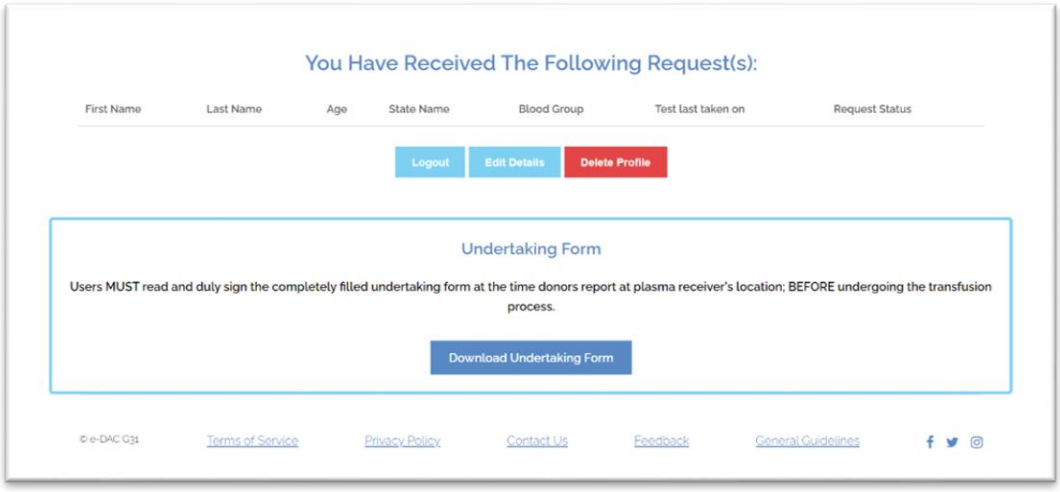
Login window



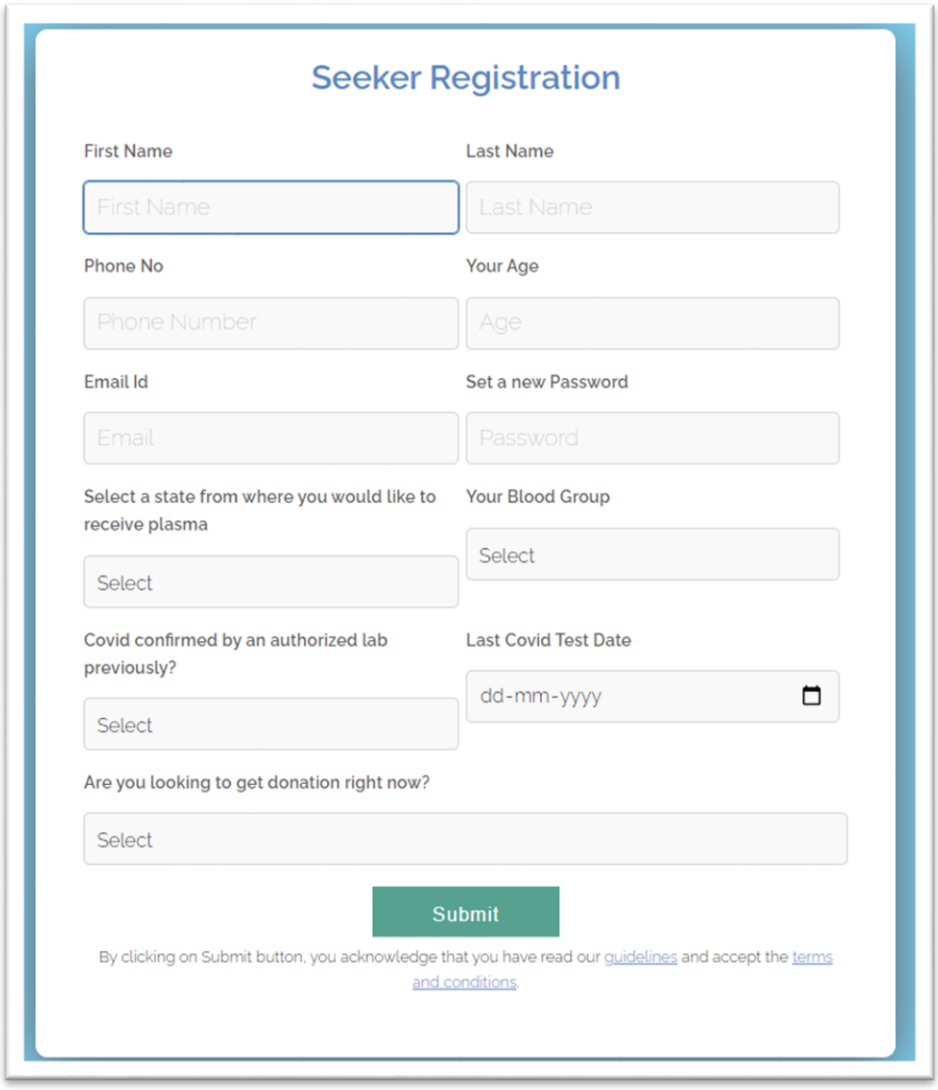
Administrator's dashboard



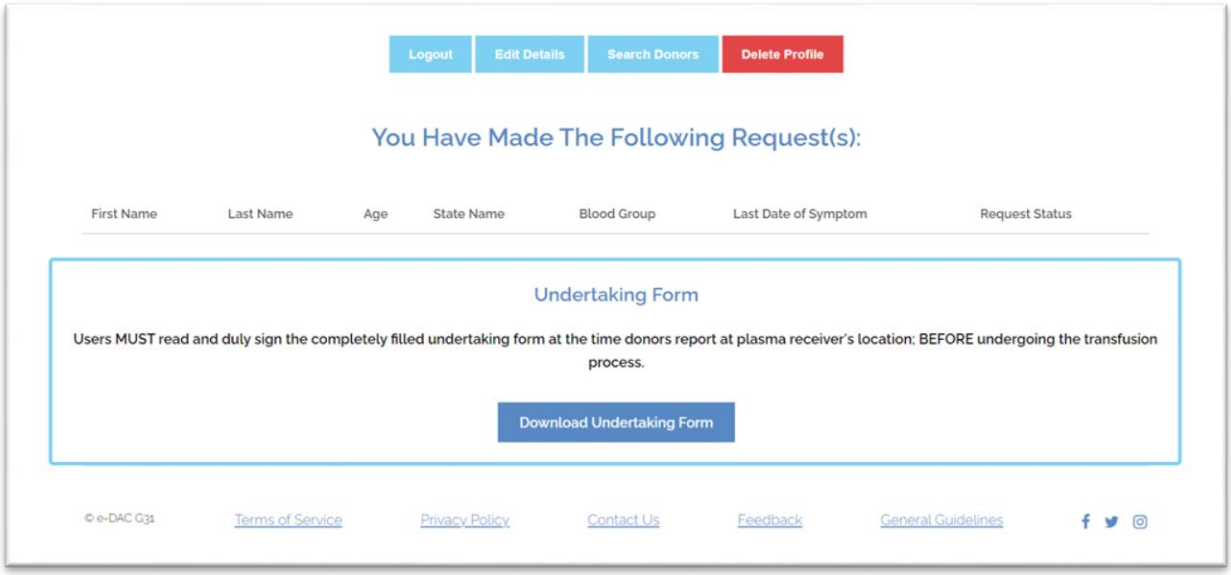
Registration form for plasma donors



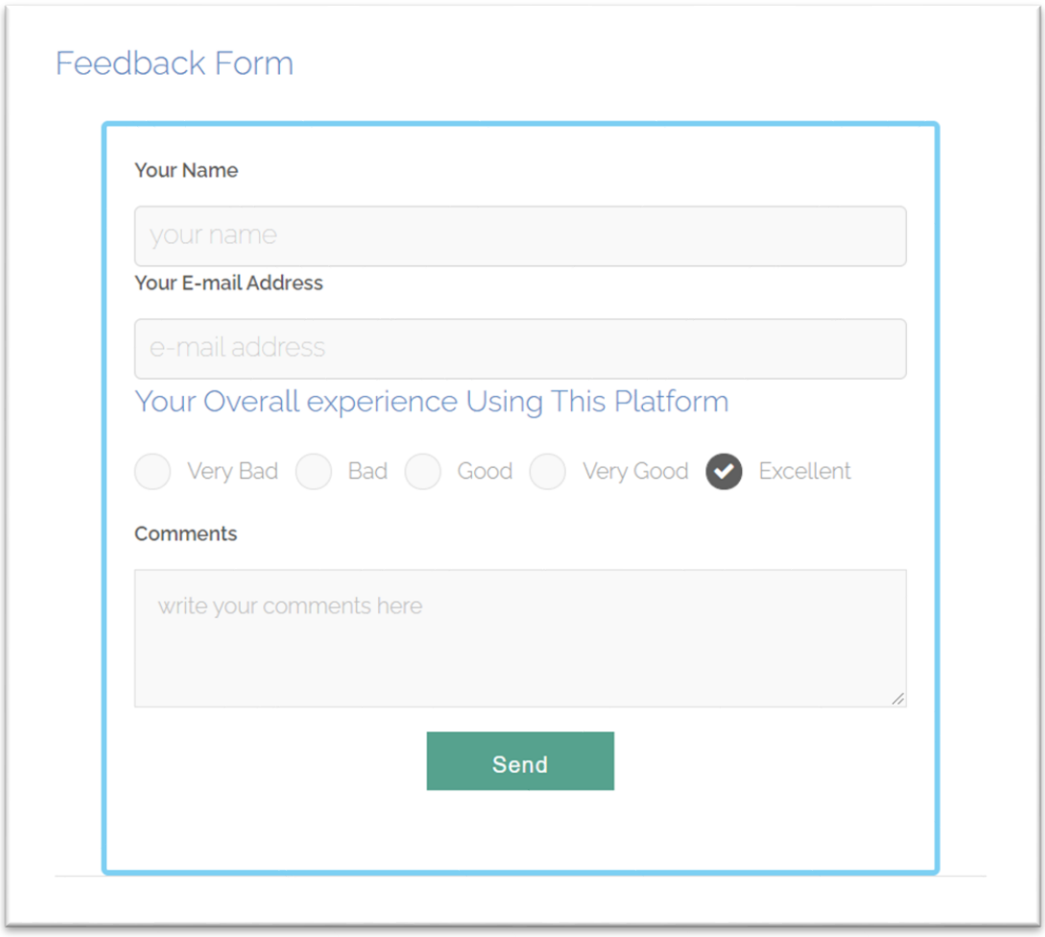
Registered donor's dashboard



Registration form for plasma seekers



Registered seeker's dashboard



A feedback form for users

Future Prospects

- Paired with a scalable IT infrastructure, this app can potentially cater to lakhs of users.
- Possibilities of serving to additional users apart from plasma seekers exists.
- Not only plasma, but this app can also serve as a bank / central repository platform to donors & seekers of various healthcare needs; such as blood, organs, funds for treatments etc.