# REPORT

| | |
|---|---|
| **DATE** | **21 November 2022** |
| **TEAM ID** | **PNT2022TMID24292** |
| **PROJECT** | **PLASMA DONOR APPLICATION** |

## 1. INTRODUCTION

### 1.1 Project Overview:

Plasma donation saves lives, and the communication between blood/plasma centres and donors plays a vital role in this. Smart apps are now considered an important communication tool, and could be best utilized in plasma donation if they are designed to fit the users' needs and preferences. We plan to make a User- friendly application for users who are in need for plasma or who wish to donate plasma to anyone who are in need. However, areas of concern, including privacy and confidentiality, should be considered during design and development. Age was identified as a contributing factor that might decrease the likelihood of app usage among donors. The donation centre staff focused on the educational features of the app and emphasized the importance of the app providing statistics and sending notifications and reminders to donors.

### 1.2 Purpose

The Plasma Donation Application would help Donors, as well as patients in need of plasma. It would allow you to search for Plasma Donors within your city and having a specific Blood Group. People who have fully recovered from COVID-19 have antibodies in their plasma that can attackthe virus. This convalescent plasma is being evaluated as a treatment for patients with seriousor immediately life- threatening COVID 19 infections, or those judged by a healthcare provider to be at

high risk of progression to severe or life threatening disease. This application can be considered as a contribution of its developers towards the medical unit of the country as well as towards humanity.

## 2. LITERATURE SURVEY

### 2.1 Existing Problem:

When a patient needs plasma, he/she has to contact a compatible donor on their circle, but it isdifficult to find a suitable donor in a group for a particular time of period. Currently people in need of plasma post pleas on social media to attract potential donors, but pleas on social media take longer to reach a wider audience. As a result, recipients are unable to find the donors within the required time.

### 2.2 References:

1. Ripathis S, Kumar V, Prabhakar A, Joshi S, Agarwal A (2015). "Microscale Passive Plasma Separation: A Review of Design Principles and Microdevices," J. Micromech Micro 25 (8): 083001; Plasma separation is of great importance in the fields of diagnosis and healthcare. Due to the lagging transition to micro scale, these recent trends are a rapid shift towards shrinking complex macro processes.

2. Kalpana DeviGuntoju, Tejaswini Jalli, Sreeja Uppala, Sanjay Mallisettiinstant plasma donor recipient connector web application 2022. JOURNAL: InternationalResearch Journal of modernization in engineering technology and Science

3. M Sai Tarun, Ravi Kishan, Shaik AzaadSuraz Basha, Shaik RajAhammad, Chandrasekhar, Neha BaggaBlood BankManagement System2021. Journal of Emerging Technologies and InnovativeResearch.

4. Nayan Das, MDAsif Iqbal Nearest Blood Plasma Donor Finding: A Machine Learning Approach 2020 23rd International Conference on Computer and Information Technology.

5. Ms.PradnyaJagtap, Ms.MonikaMandale, Ms.PrachiMhaske, Ms.SonaliVidhate, Mr. S.S. Patil Implementation of blood donation application using android smartphone 2018 Open access International journal of science & engineering.

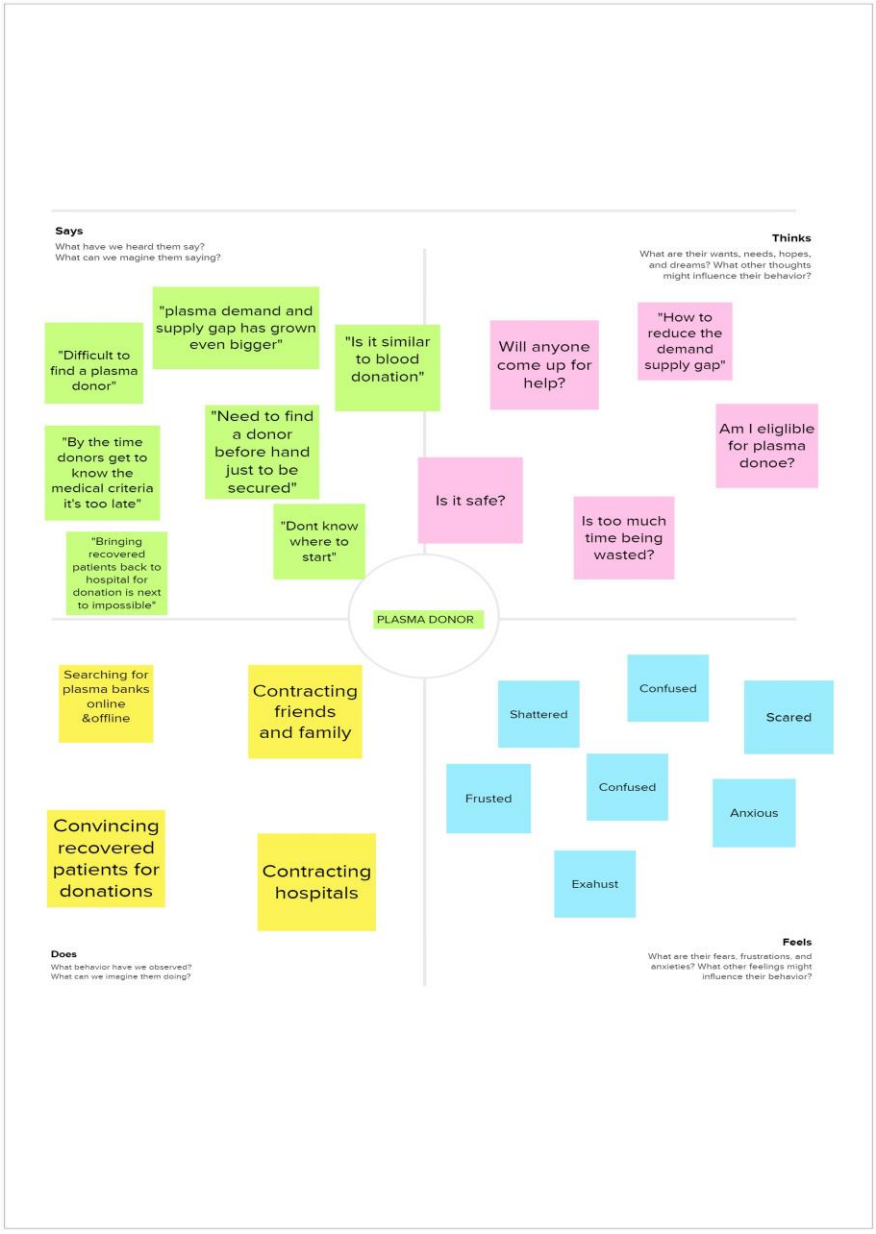
**2.3 Problem Statement Definition:**

During the COVID-19 crisis, the requirement of plasma became a high priority and the donor count has become low. Saving the donor information and helping the needy by notifying the current donor list, would be a helping hand. In regard to the problem faced, an application is to be built which would take the donor details, store them and inform them upon a request. Who does the problem affect? People who are affected by COVID and are in need of a Plasma Donor. What is the issue? When a patient needs plasma,he/she has to contact a compatible donor on their circle,family and friends but it is difficult to find suitable donor within a limited group of people in a given time. What is the impact of the issue? During the COVID 19 crisis, the requirement of plasma became high and the donor count being low. Itis very difficult to find the respective blood group donors when someone is in need.What would happen if we didn't solve the problem? The gap between the Donor and Recipient would widen. People who are eager to donate plasma cannot findthe right recipient. Currently, people in need of Plasma post Pleas on Social Media to attract potential donors. But Plea's on social media take longer to reach a wider audience. As a result recipients are unable to find donors within the required time. What would happen when it is fixed? The application makes it feasible for the COVID-19 patients to get a plasma donor easily and makes it possible to find a

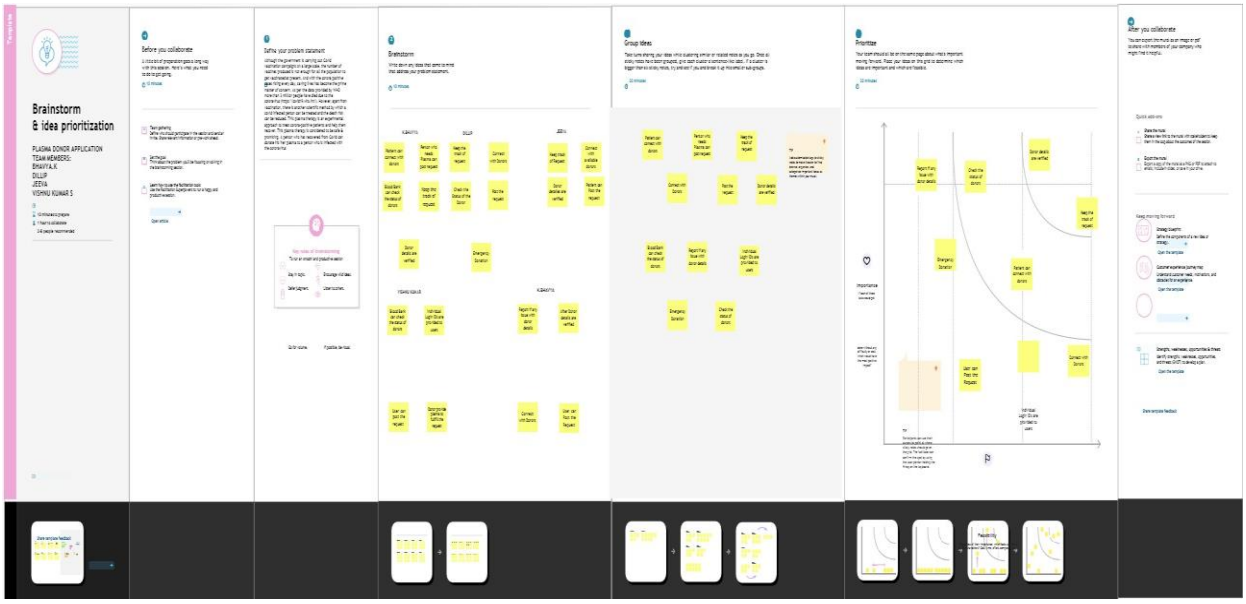
plasma donor without much difficulty. Why is it important that we fix the problem? In severe cases if the recipient is unable to find a donor, then his/her condition could worsen and may potentially result in death.

## 3. IDEATION & PROPOSED SOLUTION

### 3.1 Empathy Map Canvas



### 3.2 Ideation and Brainstorming




### 3.2 Proposed Solution

This proposed system aims at connecting the donors & the patients by an online application. By using this application, the users can either raise a request for plasma donation or requirements.

The basic solution is to create a centralized system to keep a track on the upcoming as well as past Plasma Donation Events. The recommendation solution is as follows:

Application contains two roles:

- Admin
- User User:

1. If the user wants to donate or receive they have to register with their personal details.
2. After successful registration of user.
3. A successful registration email is send to the user.
4. After successful registration user will be directed to home page.
5. They will be asked to press whether they will be donor or receiver.
6. If the user is donor then he/she will fill the donation interest form which includes their

Name, blood group details, location, last time donated date , phone number, email id.

7. After filling the donation form he/she will redirected to page in which he/she can download the ecertificate.
8. If the user is receiver then he/she can see the list of donors available and they can raise their request and contact donor directly.

Admin:

9. Admin can login using their credentials.
10. Admin can edit the request.
11. Admin can delete the request.
12. Admin can add volunteers.

### *3.3 Problem Solution Fit:-*

***Uniqueness:-***

A User Interface is simple for users to understand. We can use the application anywhere anytime. The user immediately need the plasma for their treatment but the plasma is not available in nearby hospitals, then user can use this application to raise request and directly contact the donor , request them to donate the plasma. Hospitals can also raise request donors for donation. Somebody wants to donate blood and plasma but they don't know the way to donate then they use this application which will simple to use and it will save lives of many people. Today many of them have mobile phones they can install this application and use it to save the lives of people.

***Social Impact / Customer Satisfaction:-***

We are living in a modern world and everything can be accessed online. Even though there are many application there is no proper application for plasma donation . Many of them wish to donate blood and plasma but they are unaware about donation and how they can donate. This application provides opportunity to those who want to donate plasma. Donation of plasma are happening in many places many of them come forward to donate but it is not available at right time for use. Sometimes there is a shortage of plasma of particular type. Additional facilities that we need is to access the patients information quickly before plasma transfusion. To solve this issue software applications are employed with Cloud computing and Internet of Things tool which enable features such as information retrieval and continuous data tracking with analytics. This application avoids circulating of wrong information. A single platform for maintaining

genuine information and increase the trust of participants involved int his activity. It increases the number of donors.

***Business Model (Revenue Model):-***

This application is accessible by everyone . It is free. Because of the trouble in finding givers who match a specific blood bunch, this application empowers clients to enlist individuals who wish to give plasma and keep their data in a data set. Nowadays the need for plasma increases. Anyone with basic knowledge can access this app. This can be used anywhere anytime. working with the government we can utilize an application to help those needing plasma.

***Scalability of the Solution :-***

This application helps users to find plasma donors by sitting in home itself instead of searching donors everywhere. When there is a emergency then plasma request to send to everyone. Once the donor is ready to donate receiver is notified about donation. Receiver can contact the donor. With this app donor can know the eligibility to donate and making it easier to locate suitable donor at right time.

# 4 REQUIREMENT ANALYSIS

## *4.1. Functional Requirements:-*

Following are the functional requirements of the proposed solution.

| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / SubTask)** |
|---|---|---|
| FR-1 | User Registration | Registration through Website |
| FR-2 | User Confirmation | Confirmation via Email |
| FR-3 | User Login | Login using Registered email Id |
| FR-4 | Sent Request | If plasma is required, the receiver will contact the donor |
| FR-5 | Contact Donor | Contact the donor directly if a phone number is given |
| FR-6 | View donation camps | View the list of donation camps happening nearby |

### *4.2. Non- Functional Requirements*

Following are the non-functional requirements of the proposed solution.

| FR No. | Non-Functional Requirement | Description |
|---|---|---|
| NFR-1 | **Usability** | The user interface of the plasma donor system must be well-designed and welcoming. |
| NFR-3 | **Reliability** | The system has the ability to work all the times without failures apart from network failure. A donor can have the faith on the system. The authorities will keeps the privacy of all donors in a proper manner |
| NFR-4 | **Performance** | The Plasma donor System must perform well in different scenarios. The system is interactive and delays involved are less. |
| NFR-5 | **Availability** | The system, including the online components, should be available 24/7. |
| NFR-6 | **Scalability** | The system offers the proper resources for issue solutions and is designed to protect sensitive information during all phases of operation. |

# 5. PROJECT DESIGN

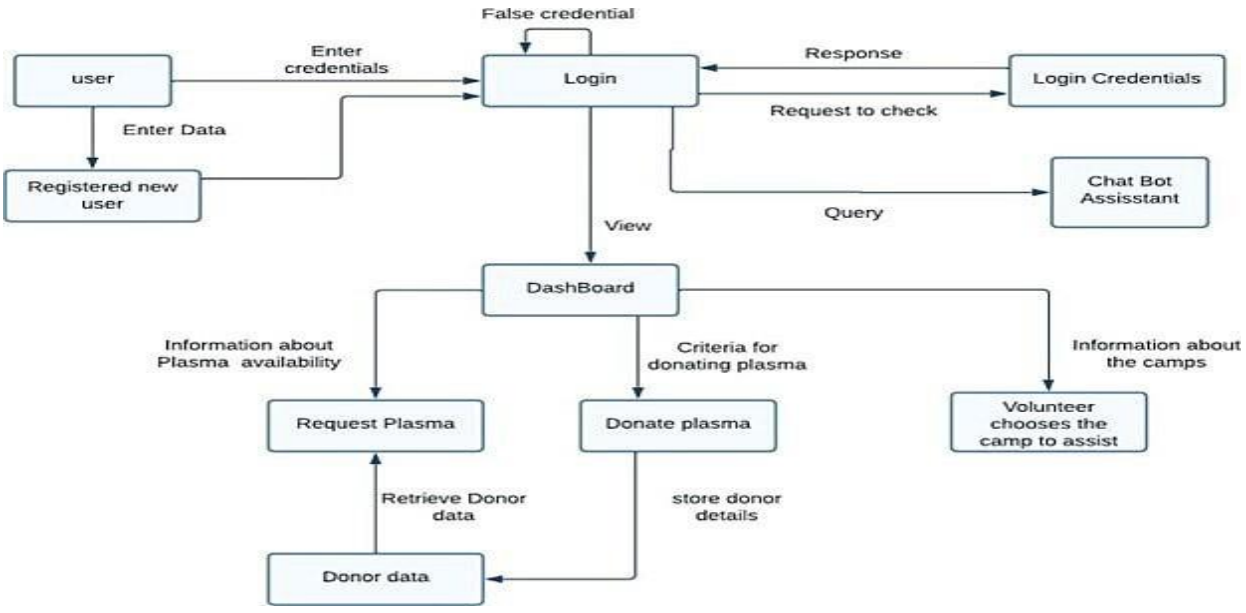
## 5.1 Data Flow Diagrams

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.

**Flow:**

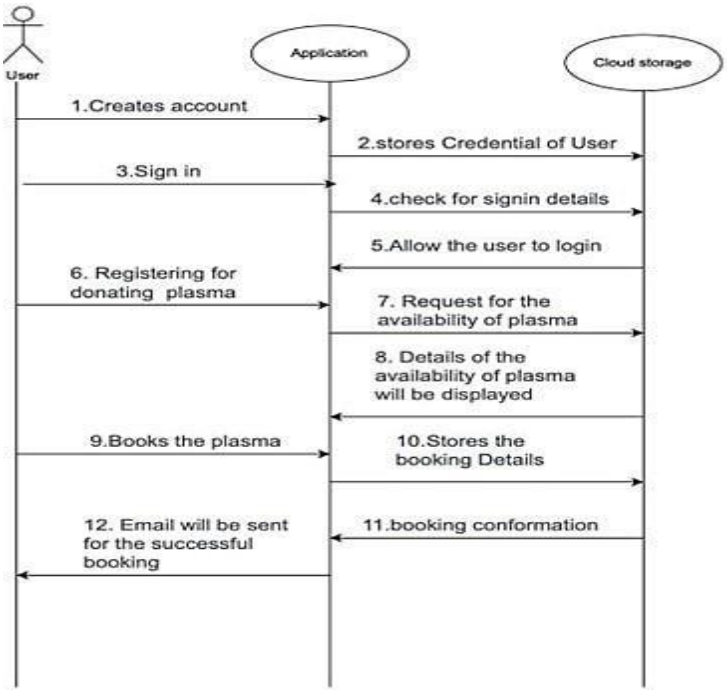
1. Donor / Recipient can register by enteringtheir details
2. Already registered user can log in using their credentials
3. Users can registerfor donation or can createa request for plasma
4. All the detailsare stored in the IBM Database
5. The server provides the information of Plasma availability
6. Users booking can be verifiedby sending Emailsor Messages

**Data Flow forPlasma Donor Application:**



## 5.2. Solution and TechnicalArchitecture

### 5.2.1 Solution Architecture




### Technical Architecture

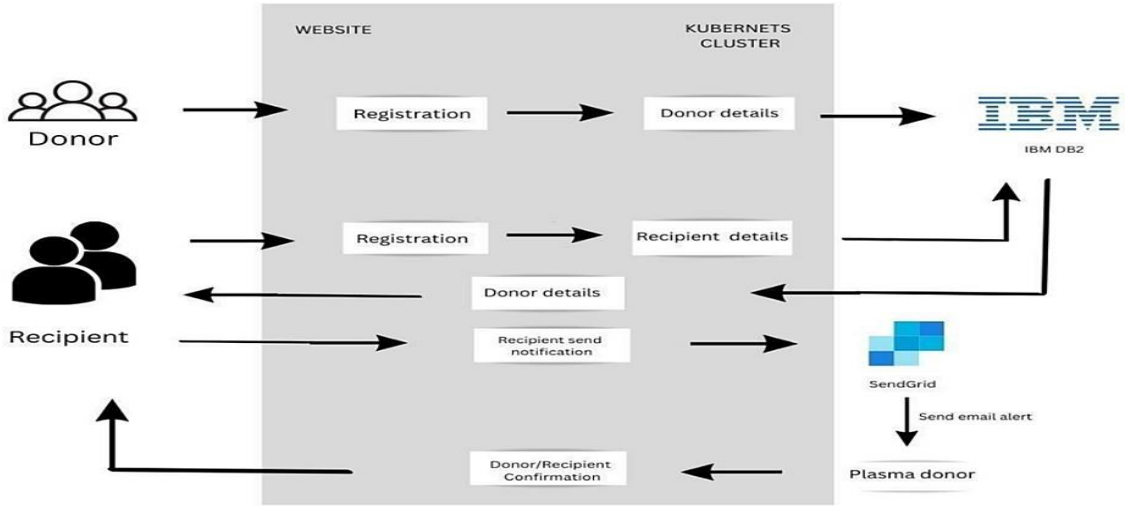



**Table-1 : Components & Technologies:**

| S.No | Component | Description | Technology |
|---|---|---|---|
| 1. | User Interface | How user interacts withapplicatione.g.Web UI, MobileApp, Chatbot etc. | HTML, CSS |
| 2. | Application Logic-1 | NewUser registers in the applicationby giving thegenuine contact details which willbe storedin the database. | Flask,HTML,CSS |
| 3. | Application Logic-2 | Usersloginginto the application byproviding theusername and password. | Flask,IBM DB2 |
| 4. | Application Logic-3 | Stats page displays the blood unit count available and thenumber of donors available for eachblood group | IBM WatsonAssistant |
| 5. | Application Logic-4 | A request page that collects thename,contact number,gender andthe bloodgroup needed.Finallythe requestis sent to a donor whoseblood groupmatches withthe request. | Sendgrid |
| 6. | Database | Characters,Integers,String,Long, Configurations | IBM DB2, MySQL |
| 7. | Cloud Storage | Database service on cloud | IBM DB2, IBM Block Storageor Other Storage Service or LocalFilesystem |
| 8. | External API-1 | Authentication, used to store,manageanddeploycontainer images. | Flask, Container registry |
| 9. | External API-2 | Sending request to donors | Sendgrid |
| 10. | Infrastructure (Server/ Cloud) | Application Deployment | Kubernetes, cloudfoundry |

**Table-2: Application Characteristics:**

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Open-Source Frameworks | List the open-source frameworks used | Python Flask |
| 2. | Security Implementations | List all the security / access controls implemented,use of firewalls etc. | Doctor content Trust (DCT), Transport LayerSecurity(TLS), Containerregistry |
| 3. | Scalable Architecture | Justifying the scalability of architecture (3 – tier, Micro-services) Kubernetesprevents hardwareproblems likedowntime error. | Docker, Kubernetescluster |
| 4. | Availability | Use of load balancers, distributed servers. Kubernetes provide all timeavailability. | Kubernetes |
| 5. | Performance | Application performance isimproved by Docker | Docker |

### 5.3 User Stories

| User Type | Functional Requirement (Epic) | User Story Number | User Story / Task | Acceptance criteria | Priority | Release |
|---|---|---|---|---|---|---|
| Donor / Recipient / Hospital In-Charge (Mobile/Desktopuser) | App Registration | USN-1 | As a user, I can register for the application by entering my email, password, and confirming my password. | I can access my account / dashboard | High | Sprint-1 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Login | USN-2 | As a user,I will signin to the application using my password andusername. | I can receive confirmation email & clickconfirm | High | Sprint- 1 |
| | Register for donate | USN-3 | As a user, I can sign in to the application and fill the plasma donation form. The bookingcan be confirmed by receiving email. | I can register &access the dashboard with FacebookLogin | Low | Sprint- 2 |
| Patient/doctor | Find the bank | USN-4 | As a user,I can register for the application and canfind theavailable bank nearby. | I can access my account and dashboard | Medium | Sprint- 1 |
| | Requestforplasma | USN-5 | As a user, I cansigninto the application by entering email& password and register the plasma request formincase of emergency. | I can register &access the dashboard with facebooklogin | High | Sprint- 1 |
| Administrator | Maintain the applications | USN-6 | As an administratorI willprovide the necessary details to the systemapplication. | I can accessmy account/dashboard | High | Sprint- 3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Connect the bankwiththe users | US N-7 | As an administrator, I will provide corrective and efficient communicati on between the bankand the user. | I can access my account / dashboard | Low | Sprin t- 4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Maintain the database | USN-8 | As an administrator, I will collect all the required datainformation of donors,recipients, banksand store thosedata information in a secured way. | I can access my account / dashboard | Medi um | Sprin t- 4 |
| Plasma Bank | Connect the bankwithuse rs | USN-7 | As a bank, I provide goodconnection withusersby providing therequired helpin emergency situations. | I can access my account / dashboard | Medi um | Sprin t- 3 |
| | Maintain the database | USN-8 | As a bank, I will maintain the hospital and plasma bankinformation for users,to accessit for their requiredneeds | I can accessmy account/ dashboard | High | Sprin t- 4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| BOT | Help the users byusing bot | USN-9 | As a bot, I will provide interactive communication withthe user and provide the<br><br>information theyneed.. | I can accessmy account/ dashboard | Medi um | Sprint-4 |

## 6. PROJECT PLANNING AND SCHEDULING

### 6.1 Sprint Planning and Estimation

| **Sprint** | **Functional Requirement** | **User StoryNumb er** | **User Story / Task Story** | **Points** | **Priority** |
|---|---|---|---|---|---|
| Sprint-1 | Registration | PDA-1 | As a user, I can register for theapplication by entering my Name,email, password, confirming my password, Age, Blood Group. | 3 | High |
| Sprint-3 | Registration | PDA-2 | As a user, I will receive confirmation email once I haveregistered for the application | 3 | Medium |
| Sprint-2 | Registration | PDA-3 | Connecting with IBM Database | 5 | Medium |
| Sprint-1 | Login | PDA-4 | As a user, I can log into the application by entering email andpassword | 1 | High |
| Sprint-3 | Hand le reque st | PDA-5 | As a donor ,I will receive requestmail from therecipient | 4 | Medium |

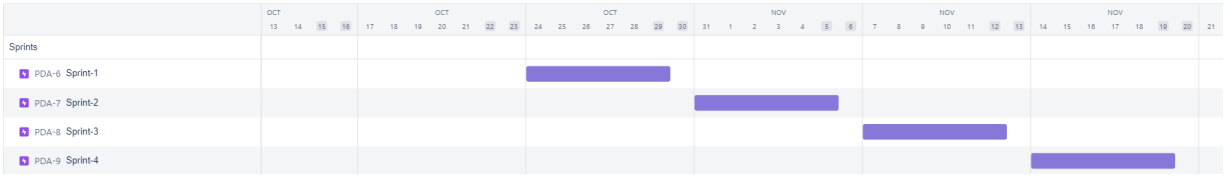
| | | | | | |
|---|---|---|---|---|---|
| Sprint-4 | Hand le reque st | PDA-6 | Confirmation mail for requestedrecipient | 2 | Low |
| Sprint-4 | Deployment | PDA-28 | Deploying the app to IBM Kubernetes | 2 | Low |
| Sprint-1 | Home Page | PDA-10 | As a user, I can view the homepage of the website | 2 | Medium |
| Sprint-1 | About Page | PDA-12 | As a user,I can view the aboutpage on the website and get information related to Plasma Donation | 2 | Medium |
| Sprint-2 | Register asDonor | PDA-13 | As a user, I can register as a donor by submitting a form anduploading certificate of recovery from Covid-19 | 3 | High |
| Sprint-2 | Send Request | PDA-14 | As a user, I can raise a requestforplasmadonation with specific requirements through | 2 | High |
| | | | the request page. | | |
| Sprint-3 | View Reques ts | PDA-15 | As a user, I can view requests forplasma donation verified byadmin | 4 | Medium |
| Sprint-4 | Maintenance | PDA-16 | As an admin, I can maintain thedatabases involved | 2 | Medium |
| Sprint-2 | Handle Requests | PDA-17 | As an admin, I can view all requests for plasma donation | 1 | High |
| Sprint-4 | Handle Reques ts | PDA-18 | As an admin, I can delete requests that are past some time period or have been closed | 3 | Low |

| | | | | | |
|---|---|---|---|---|---|
| Sprint-3 | Handle Requests | PDA-27 | Confirmation mail registereddonors | 1 | Low |
| Sprint-4 | Handle Requests | PDA-8 | Confirmation mail for requested recipient | 2 | Medium |
| Sprint-2 | Solving User Queries | PDA-19 | Creating an ChatBotthat helpsto solve the queries of the user. | 2 | High |

### 6.2 Sprint Delivery Schedule

| **Sprint** | **Total Story Points** | **Duration** | **Sprint Start Date** | **Sprint EndDate(Planned)** | **Sprint Release(Actualrelease)** |
|---|---|---|---|---|---|
| Sprint-1 | 8 | 5 Days | 27 Oct 2022 | 31 Oct 2022 | 30 Oct 2022 |
| Sprint-2 | 13 | 6 Days | 1 Nov 2022 | 06 Nov 2022 | 05 Nov 2022 |
| Sprint-3 | 12 | 6 Days | 07 Nov 2022 | 12 Nov 2022 | 11 Nov 2022 |
| Sprint-4 | 11 | 6 Days | 14 Nov 2022 | 19 Nov 2022 | 13 Nov 2022 |

### 6.3 Reports from JIRA



## 7.CODING AND SOLUTIONING

### *7.1 SendGrid*

SendGrid is a cloud-based SMTP provider that allows you to send email without having to maintain email servers. SendGrid manages all of the technical details, from scaling the infrastructure to ISP outreach and reputation monitoring to whitelist services and real time analytics.

SendGrid provides two ways to send email: through our SMTP relay or through our Web API. SendGrid provides client libraries in many languages. This is the preferred way to integrate with SendGrid. If you choose to use SendGrid without a client library, the Web API is recommended in most cases as it is faster, provides some beneft with encoding, and tends to be easier to use. SMTP provides many features by default, but is harder to setup.

**Web API**

1. The Web API has some advantages over SMTP:
2. If your ISP blocks all outbound mail ports and your only option is HTTP.
3. If there is high latency between your site and ours, the Web API might be quicker since it does not require as many messages between the client and server.
4. If you do not control the application environment and cannot install and configure an SMTP library.
5. If you build a library to send email, developing against a web API provides quicker development. **SMTP Relay**
6. If you are integrating SendGrid with an existing application, setting up the application to use our SMTP relay is easiest, as it only requires modifying SMTP configuration.
7. Change your SMTP username and password to your SendGrid credentials.
8. Set the server host name to smtp.sendgrid.net
9. Use ports 25 or 587 for plain/TLS connections and port 465 for SSL connections.

***Code:*** *import os from dotenv import load_dotenv*

*load_dotenv() from sendgrid import*

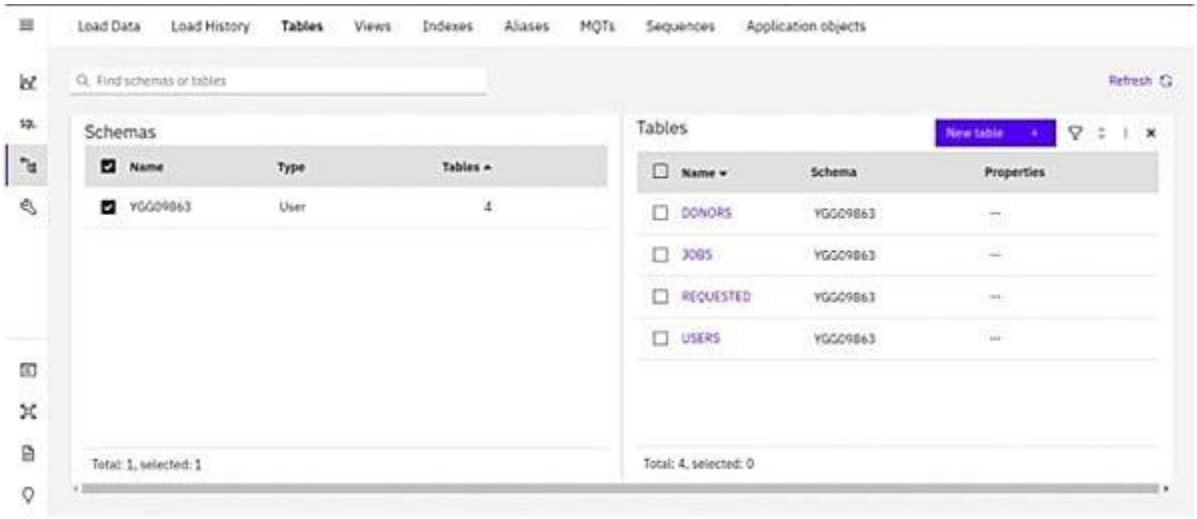
*SendGridAPIClient from sendgrid.helpers.mail*

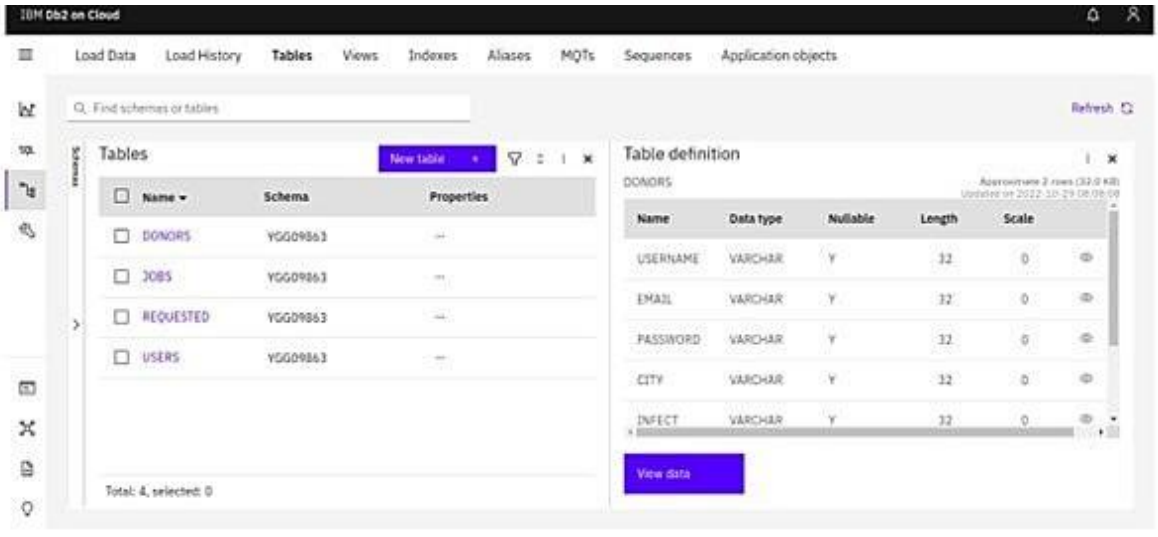
*import Mail def*

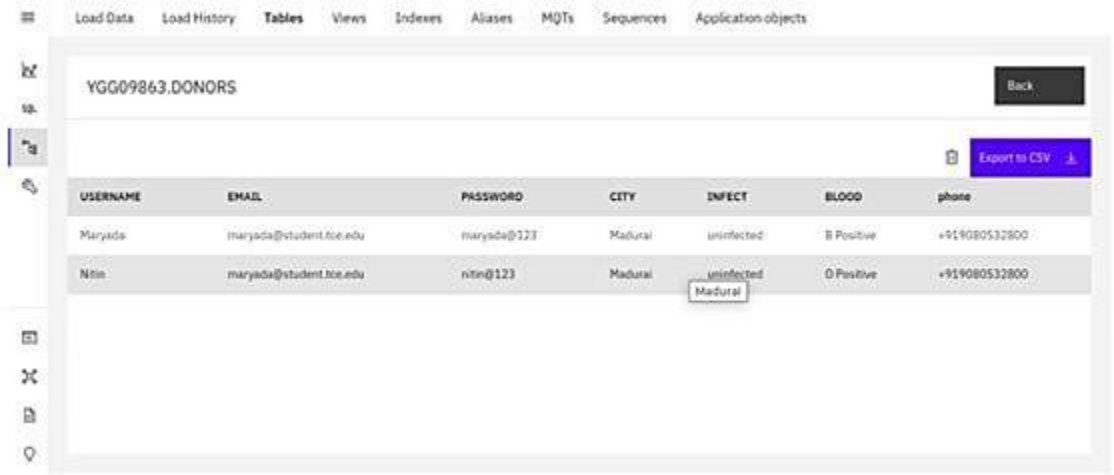
*sendmail(usermail,subject,content):*

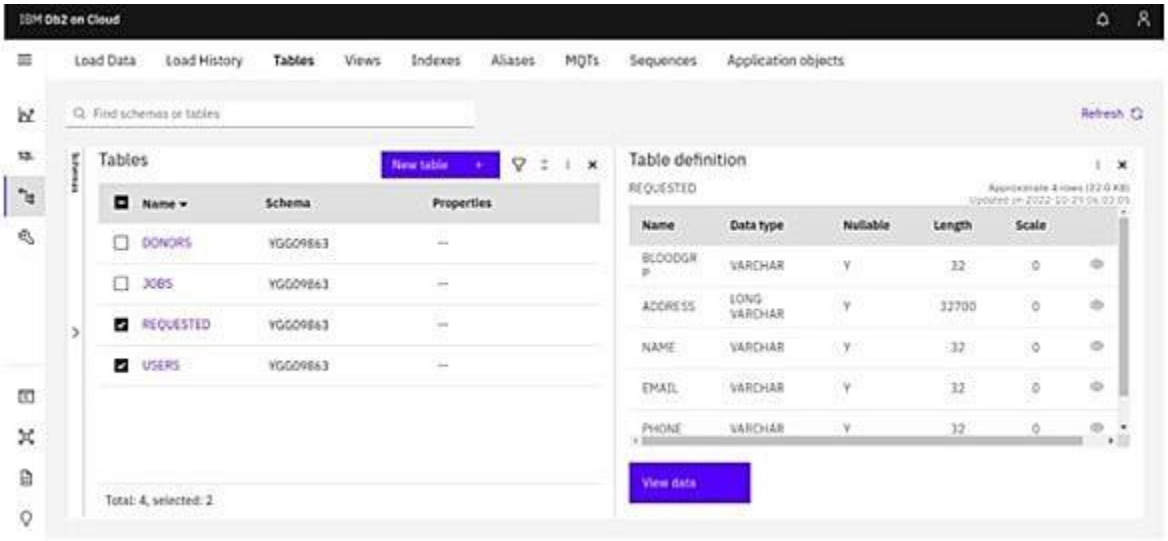
*message = Mail(from_email='maryada@student.tce.edu',to_emails=usermail,subject=subject,html_content=' {} '.format(content)) try: sg = SendGridAPIClient(os.getenv('SENDGRID_API_KEY')) response = sg.send(message) print(response.status_code) print(response.body) print(response.headers) except Exception as e: print(e.message)*

### *7.2 Database Schema*






# 8. TESTING

## 8.1 Test Cases

| Test case ID | Test Scenario | Test Data | Expected Result | Actual Result | Status |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| TC_ OO1 | Verify user is able to see theLogin/Signup popup when user clicked on Loginor Register button | http://169.51.203.154:30009/ | Login/Signup popup should display and the user must be abletoswitch between the pageswith a single click | Working as expected | Pass |
| TC_ OO2 | Verify the UI elements are responsive when changingthe window size | http://169.51.203.154:30009/ | Application shouldre-align the image and text according tothe new windowsize and should be **r**esponsive | Working as expected | Pass |
| TC_ OO3 | Verify that all the fields suchas Username, Mobile Number, Password and Email have a valid placeholder | **Placeholders -Registration Page**<br>Enter your UserName<br>Enteryour EmailEnteryour mobilenumber<br>Create a Password<br>**Placeholders - Login**<br>Enter UserNameEnter Password | Placeholders must be visible | Working as expected | Pass |
| TC_ OO4 | If a user tries to register thenhe/she must fill all the required fields | **Form Details**<br>Your Name - bhavya546 | Application should show 'Pleasefill this | Working as expected | Pass |

### 8.2 User Acceptance Testing

The test coverage and open issues of the Plasma Donor Application project at the time ofthe release toUser Acceptance Testing (UAT).

**Defect Analysis**

| Resolution | Severity1 | Severity2 | Severity 3 | Severity 4 | Subtotal |
|---|---|---|---|---|---|
| Flask | 2 | 2 | 0 | 0 | 4 |
| Cloud account creation | 2 | 1 | 1 | 0 | 3 |
| Connectingwi thDb2 | 4 | 3 | 1 | 0 | 8 |
| Sendgrid | 2 | 3 | 0 | 1 | 6 |
| Docker | 2 | 1 | 0 | 0 | 3 |
| Totals | 12 | 10 | 2 | 1 | 25 |

**Test Case Analysis**

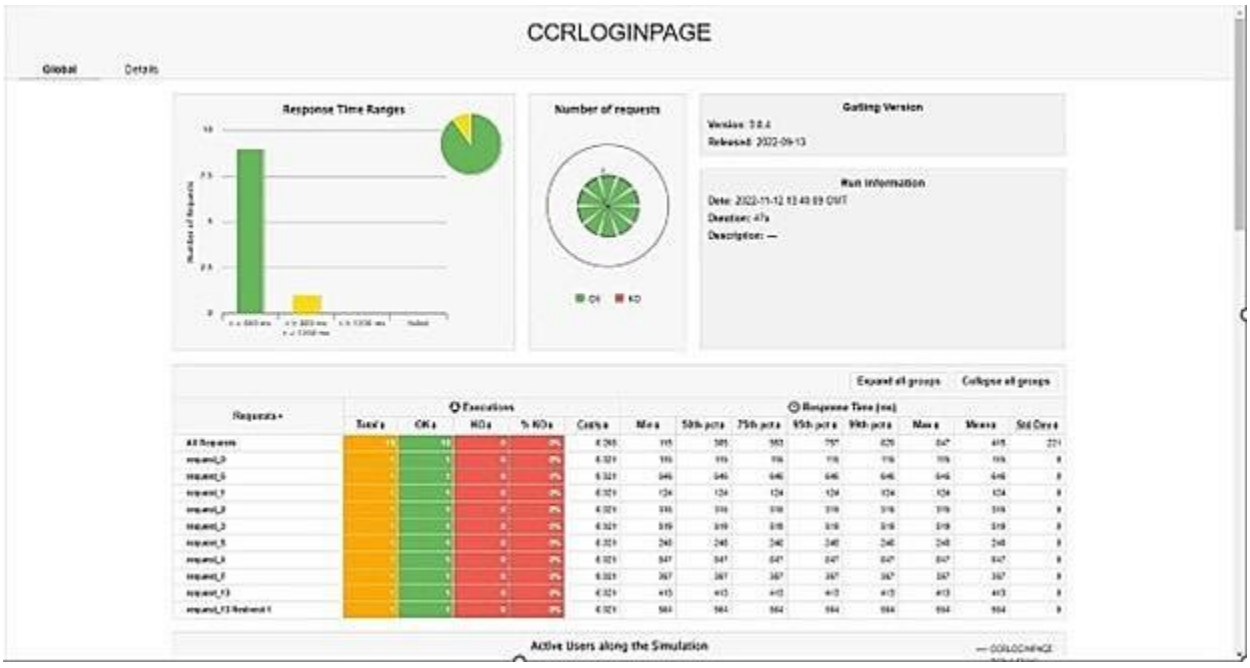
| Section | Total Cases | Not Tested | Fail | Pass |
|---|---|---|---|---|
| Home Page | 5 | 0 | 0 | 5 |
| Login Page | 5 | 0 | 0 | 5 |

| | | | | |
|---|---|---|---|---|
| Register Page | 7 | 0 | 0 | 7 |
| Login Dashboard | 5 | 0 | 0 | 5 |
| Donating Plasma Page | 8 | 0 | 0 | 8 |
| Request PlasmaPage | 8 | 0 | 0 | 8 |
| Chatbot | 2 | 0 | 0 | 2 |
| Donor list | 6 | 0 | 0 | 6 |

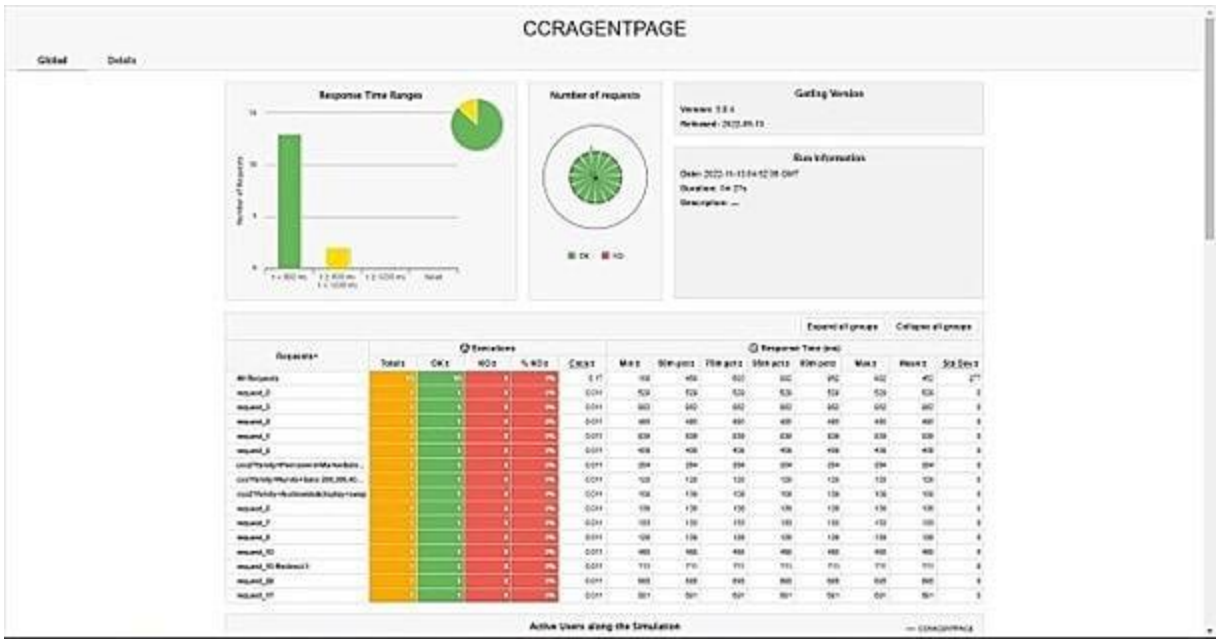
# 9. Result

## 9.1 Performance metric

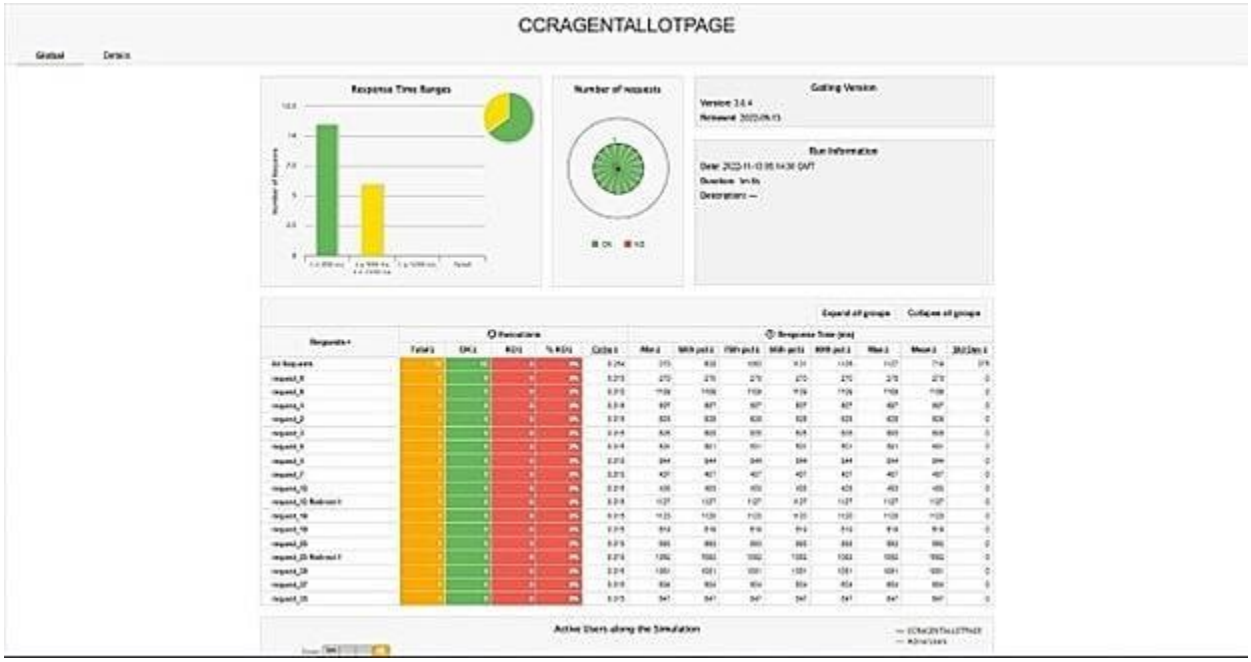
### login page



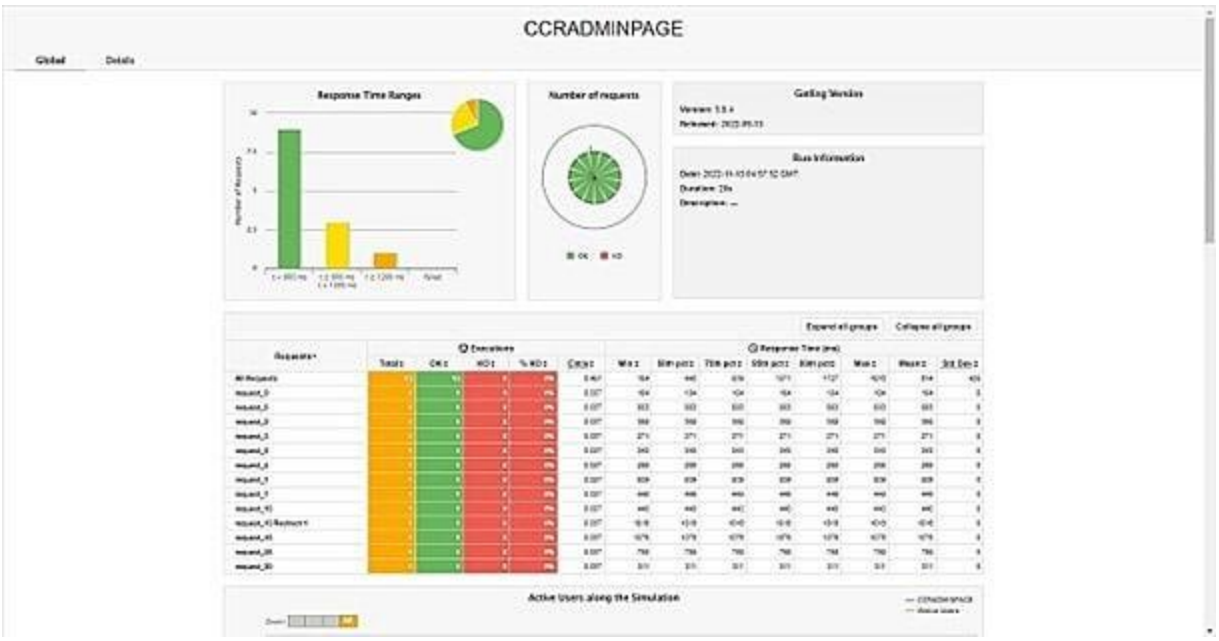

### Register Page




## Donor Page




## Request Page




# 10 ADVANTAGES AND DISADVANTAGES

## 10.1 Advantages

The main advantage is that it is relatively simple way to collect data from many peoplequickly and at zero cost.

Good Validity - people can fulfill and requesttheir needs directly.

A second advantage is that data can be collected in various ways to suit the researcher's needs. The application has the ability to collect data from a large number of people and storedin the database.

It helps people to help others who medicalneeds.It is a relatively safe process.

## 10. 2 Disadvantages

The main disadvantage is that questionnaires might be the possibility of providinginvalidanswers.Fixed choice questions lack flexibility.

There is a chance that some questions will be ignoredor left unanswered.

Self-reported answers may be exaggerated; respondents may be too embarrassed toreveal privatedetails.

Low response rate.

## 11. CONCLUSION

Although the government is carrying out Covid vaccination campaigns on a large scale, the number of vaccines produced is not enough for all the population to get vaccinated at present. And with the corona positive cases rising every day, saving lives has become the prime matter of concern. As per the data provided by WHO more than 3 million people have died due to the coronavirus. However, apart from vaccination, there is another scientific method by which a covid infected person can be treated and the death risk can be reduced. This plasma therapy is an experimental approach to treat coronapositive patients and help them recover. This plasma therapy is considered to be safe & promising. A person who has recovered from Covid can donate his/her plasma to a person who is infected with the coronavirus.

This system proposed here aims at connecting the donors & the patients by an online application. By using this application, the users can either raise a request for plasma donation or requirement. Both parties can Accept or Reject the request. User has to Upload a Covid Negative report to be able to Donate Plasma. This system is used if anyone needs a Plasma Donor Blood and Plasma donation is a kind of citizen's social responsibility in which an individual can willingly donate blood/plasma via our app. This Application has been created with the concept and has sought to make sure that the donor gives blood/plasma to community. This model is made user friendly so anybody can view and maintain his/her account. This application will break the chain of business through blood/plasma and help the poor to find donor at free of cost. This project will help new blood/plasma banks improve their services and progress from traditional to user-friendly frameworks.

## 12. FUTURE SCOPE

Plasma Application can be developed to further improve user accessibility via integrating this application with various social networks application program interfaces (APIs). Consequently, users can login and sign up using various social networks. This would increase number of donors and enhances the process of blood donation.

User interface (UI) can be improved in future to accommodate global audience by supporting different languages across countries. Data scraping can be done from different social networks and can be shown in the Blood/Plasma Request Feeds. Appointments can be synchronized with Google and Outlook calendars for the ease of users.

Donor and Beneficiary Stories feature aims to create a sense of belonging to the community. Donors will be able to view and share personal experiences about their donation; Beneficiaries can share their experiences of receiving blood transfusion which contributed to their improved health and lives.

Live Check-in Process feature aims to provide a better experience with regards to the waiting time when the user is in the process of donation. We hypothesise that a more efficient experience will help the user look forward to his blood/plasma donation appointments.