

# PLASMA DONOR APPLICATION

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## ABSTRACT

A plasma is a liquid portion of the blood, over 55% of human blood is plasma. Plasma is used to treat various infectious diseases and it is one of the oldest methods known as plasma therapy. Plasma therapy is a process where blood is donated by recovered patients in order to establish antibodies that fights the infection. In this project plasma donor application is being developed by using IBM services. For instance, during COVID 19 crisis the requirement for plasma increased drastically as there were no vaccination found in order to treat the infected patients, with plasma therapy the recovery rates were high but the donor count was very low and, in such situations, it was very important to get the information about the plasma donors. Saving the donor information and notifying about the current donors would be a helping hand as it can save time and help the users to track down the necessary information the donors.

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## CHAPTER-1

### INTRODUCTION

#### 1.1 PROJECT OVERVIEW:

Cloud computing helps in on-demand deliver of IT resources over the internet with pay-as-you go pricing model where users have to pay only for the resource that they use. This helps to reduce the additional infrastructural cost and users can access technology services such as power, storage, compute, database, networking, analytics and also intelligence over the internet in order to offer flexible, innovation, and economies of scale. Users can run their infrastructure more efficiently and scale their business according to their requirement. Cloud deployment modules such as public cloud, private cloud, hybrid cloud and community cloud help the users to choose the type of deployment options that are beneficial for their company. Cloud service models consists of software as a service (saas), platform as a service (paas) and infrastructure as a service (iaas).

#### 1.2 PURPOSE:

A donor has to register to the website providing his details such as name, contact information (phone number and email id) along with donor's blood group and donor's plasma count. In this project the services used are IBM Service which will allow the users to run the code without managing or provisioning the servers, IBM API gateway is a fully managed service which makes it easy for a developer to create, publish monitor, secure, maintain APIs at any scale. It handles all the tasks which is involved in accepting and processing hundreds of Concurrent API calls along with traffic management, authentication, authorization and API

version management. IBM Cloud is a multi-master database used for storing the data.

## CHAPTER-2

### SURVEY LITERATURE

#### 2.1 EXISTING PROBLEM:

In most of the existing plasma donor application then system is closed for general plasma donation and mainly focused on COVID-19 patients for plasma donation, the android mobile user will not be able to insert or view details if the server goes down and a disadvantage of single point of failure. Most of the user details remains unverified and it's difficult to track the fake users. The user interface of the application is not being user friendly and the user must have a device with android operating system with an active internet connection to interact with this application.

#### 2.2 REFERENCES:

1. The Melbourne Declaration on 100% voluntary non-remunerated donation of Plasma and Plasma components. Geneva: World Health Organization; 2009. [17 August 2012]
2. Global Database on Plasma Safety. Summary report 2011. Geneva: World Health Organization; 2011. [22 August 2012].
3. Eder A, et al. Selection criteria to protect the Plasma donor in North America and Europe: past (dogma), present

(evidence), and future (hemovigilance). *Transfusion Medicine Reviews*. 2009;23(3):205–220.

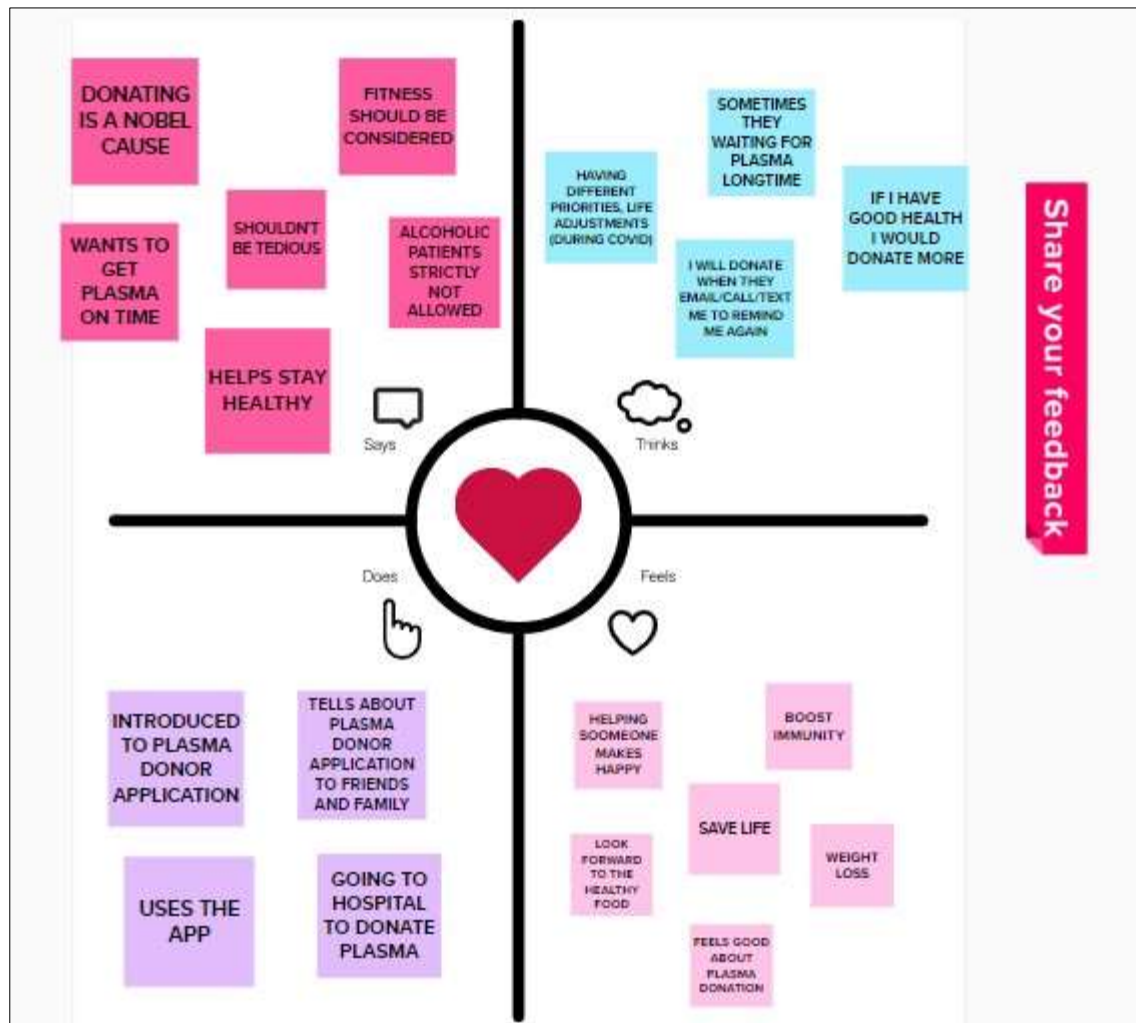
### 2.3 PROBLEM STATEMENT DEFINITION:

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.

CHAPTER-3  
IDEATION & PROPOSED SOLUTION



### 3.1 EMPATHY MAP CANVAS



### 3.2 IDEATION & BRAINSTROMING:

Plasma is used for the treatment of serious health problems. This is why there are blood drives asking people to donate blood, plasma. Plasma is utilized to treat different irresistible sicknesses and it is one of the most established strategies known as plasma treatment.

During Coronavirus emergency the necessity for plasma expanded radically as there were no immunization found to treat the contaminated patients, with plasma therapy the recovery rates where high but the donor count was very low and in such situations it was very important to get the information about the plasma donors. Saving the contributor data and telling about the ongoing givers would be some assistance as it can save time and assist the clients with finding the vital data about the contributors.



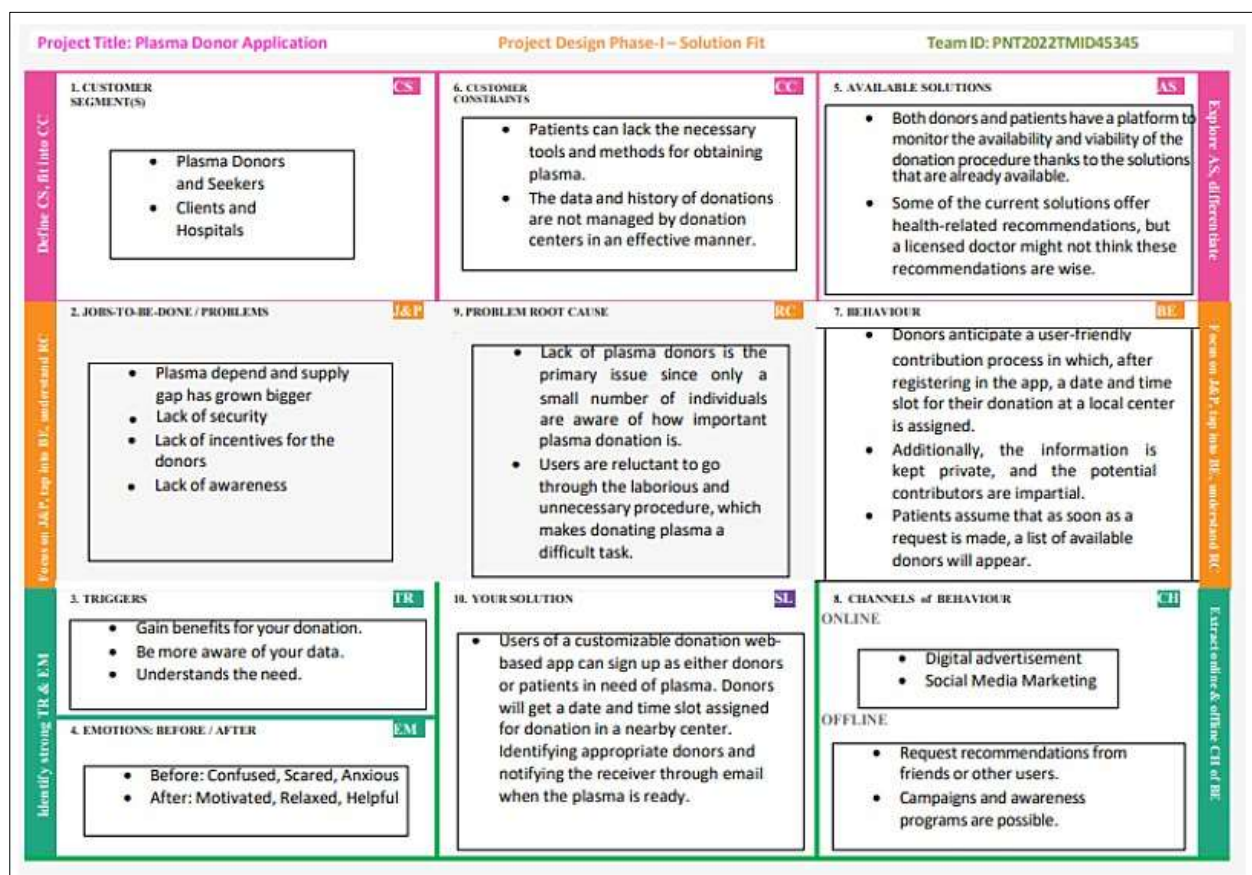
### 3.3 PROPOSED SOLUTION:

#### PLASMA DONOR APPLICATION

##### Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	User can view information of nearby hospitals, blood banks and they can also receive blood from different donors.
2.	Idea / Solution description	By using this application, the users can either raise a request for plasma donation or requirement.
3.	Novelty / Uniqueness	There is GPS, it provides a list of blood banks in the user area.
4.	Social Impact / Customer Satisfaction	The user get satisfied when they receive blood at the critical situation.
5.	Business Model (Revenue Model)	Not Calculated
6.	Scalability of the Solution	The hospitals will update the blood volume of each group immediately.

### 3.4 PROBLEM SOLUTION FIT



## CHAPTER-4

### REQUIREMENT ANALYSIS

#### 4.1 FUNCTIONAL REQUIREMENT:

##### PLASMA DONOR APPLICATION

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form (WebApp)
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Certification	After the donor donates plasma, we will give them a certificate of appreciation and authentication.
FR-4	Statistical data	The availability of plasma is given in the page as stats, which will be helpful for the users.
FR-5	User Plasma Request	Users can request to donate plasma by filling out the request form on the page. Once the request is submitted, they will get an email
FR-6	Searching/reporting requirements	Users can use the search bar to look up information about camps and other topics.
FR-8	Virtual Assistants	A virtual assistant is a software agent that can carry out tasks or provide services on behalf of a person in response to commands or inquiries. When users enter their inquiries, the system will respond with pertinent information about plasma and details of plasma donation.

## 4.2 NON-FUNCTIONAL REQUIREMENTS:

### PLASMA DONOR APPLICATION

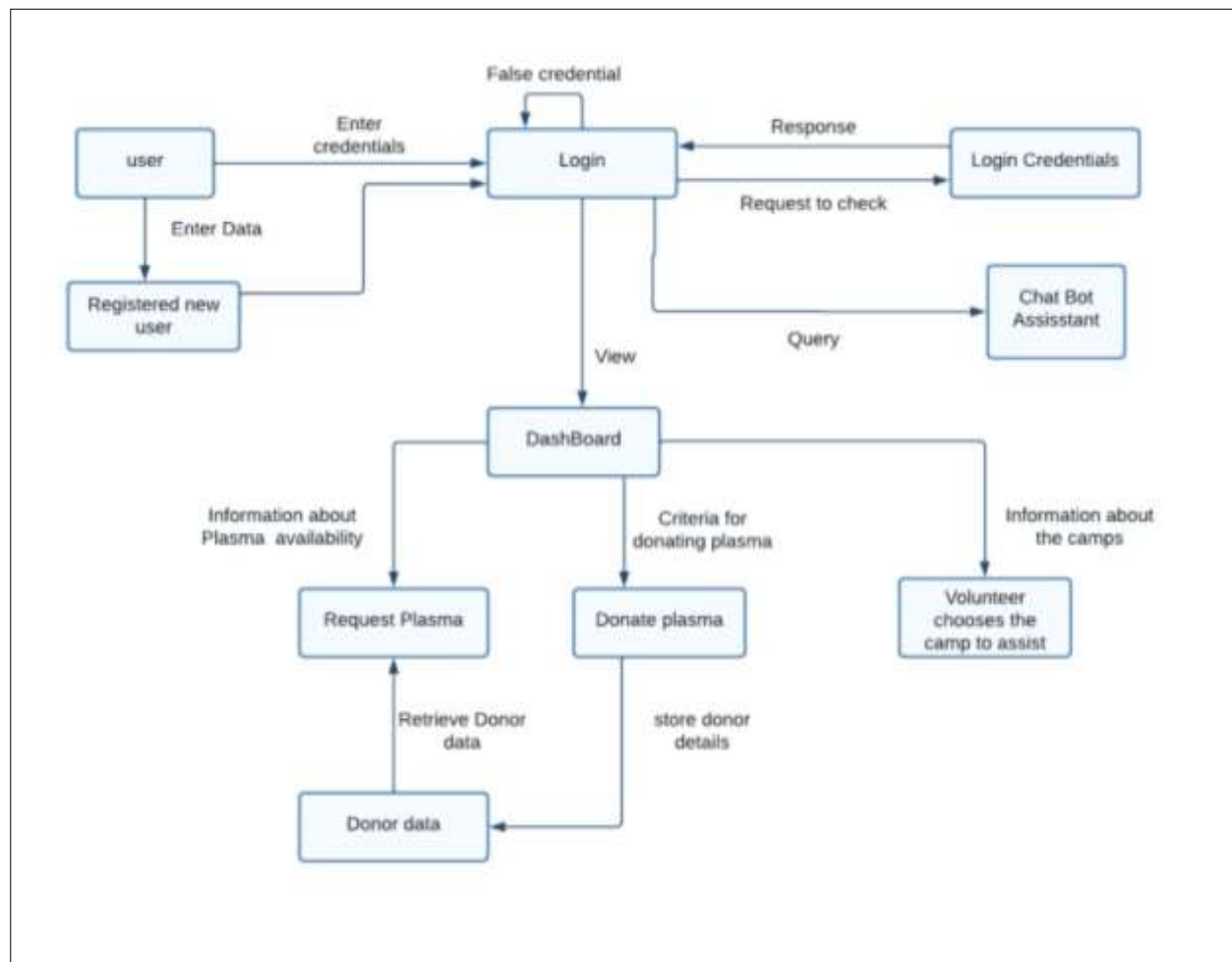
FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Must have a good looking User friendly interface.
NFR-2	Security	It must be secured with the proper username and password.
NFR-3	Reliability	The system should be made in such a way that it is reliable in its operations and for securing the sensitive details.
NFR-4	Performance	Users should have a proper Internet Connection.
NFR-5	Availability	The system including the online and offline components should be available 24/7.
NFR-6	Scalability	The application has the ability to handle growing numbers of users and load without compromising on performance and causing disruptions to user experience.

## CHAPTER-5

### PROJECT DESIGN

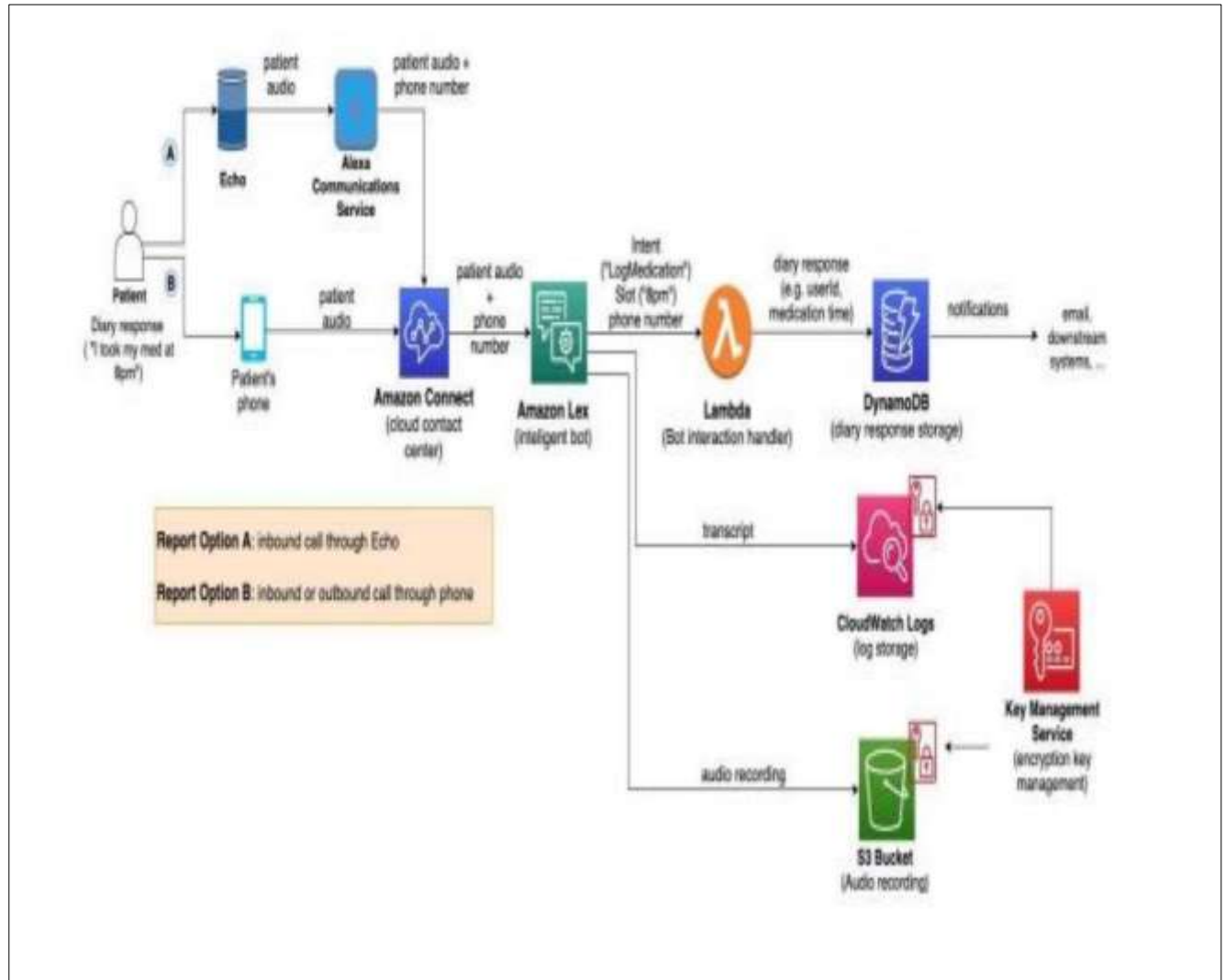
#### 5.1 DATA FLOW DIAGRAMS:

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.





## 5.2 SOLUTION & TECHNICAL ARCHITECTURE:



### 5.3 USER STORIES:

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	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
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through Gmail		Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password	I can access my data by login	High	Sprint-1
	Dashboard	USN-6	As a user, I can view the dashboard and by products		High	Sprint -2
Customer (Web user)	Registration / Login	USN-7	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard		Sprint -1
Customer Care Executive	Contact with Customers	USN-8	As a Customer customers care executive, I solve the customer Requirements and feedback	I can receive calls from customers	High	Sprint-1

## CHAPTER-6

### PROJECT PLANNING & SCHEDULE

#### 6.1 SPRINT PLANNING & ESTIMATION

<b>Sprint</b>	<b>Functional Requirement (Epic)</b>	<b>User Story Number</b>	<b>User Story / Task</b>	<b>Story Points</b>	<b>Priority</b>	<b>Team Members</b>
Sprint-1	<b>Registration</b>	USN-1	A User can Register and Create the User Account.	20	High	Reena.S Shifa.S
Sprint-1	<b>Login</b>	USN-2	A User can Sign-in to the application by using the registered email id and password.	18	High	Reena.S Shifa.S
Sprint-2	<b>Cloud and Database</b>	USN-3	Connecting flask app with database [IBMDB2]. Implementation of IBM chatbot	20	High	Reena.S Aljuna.A
Sprint-3	<b>Deployment in DevOps, Mailing</b>	USN-4	Creating images with docker, Deploying Kubernetes and add the mailing service.	16	Medium	Reena.S Amirtha Varshini.A
Sprint-4	<b>Testing and Deployment to user</b>	USN-5	To make sure that the software is handy to users.	20	High	Reena.S Aljuna.A

## 6.2 SPRINT DELIVERY SCHEDULE:

**Project Tracker, Velocity & Burndown Chart: (4 Marks)**

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint1	12	11 Days	24 Oct 2022	29 Oct 2022	20	17 Nov 2022
Sprint2	12	8 Days	31 Oct 2022	05 Nov 2022	20	17 Nov 2022
Sprint3	12	7 Days	07 Nov 2022	12 Nov 2022	20	17 Nov 2022
Sprint4	12	6 Days	14 Nov 2022	19 Nov 2022	20	18 Nov 2022

### Velocity:

Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

sprint duration = 6 days

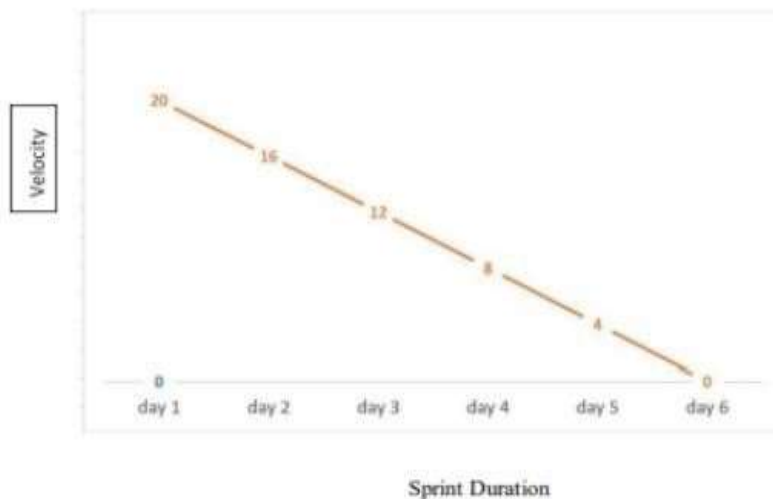
velocity = 20

$$AV = VELOCITY / SPRINT DURATION$$

$$AV = 20 / 6$$

$$AV = 3.333$$

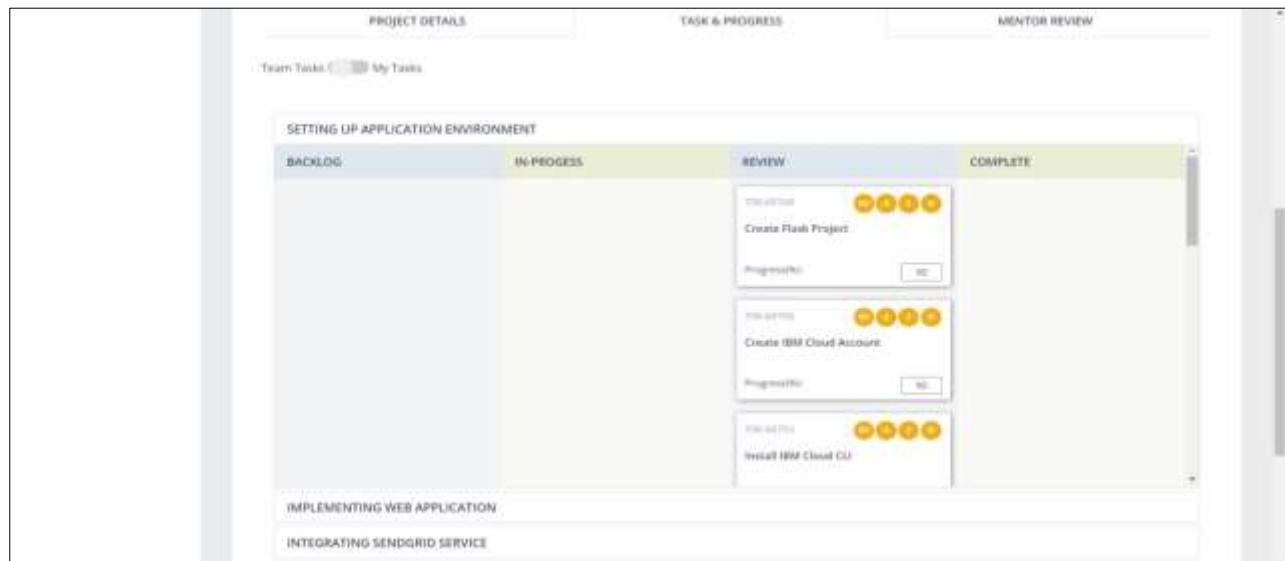
A burndown chart is a graphical representation of work left to do versus time. It is often used in agile software development methodologies such as Scrum. However, burn down charts can be applied to any project containing measurable progress over time.



### Reference:

<https://www.atlassian.com/agile/project-management>  
<https://www.atlassian.com/agile/tutorials/how-to-do-scrum-with-jira-software>  
<https://www.atlassian.com/agile/tutorials/epics>  
<https://www.atlassian.com/agile/tutorials/sprints>  
<https://www.atlassian.com/agile/project-management/estimation>  
<https://www.atlassian.com/agile/tutorials/burndown-charts>

## 6.3 REPORTS FROM JIRA:



# CHAPTER-7

## CODING & SOLUTIONING

### 7.1 FEATURE-1:

#### HOME PAGE.HTML

```
{% extends 'base.html' %}
```

```
    {% block title %}
    <title>Plasma-Home</title>
    <style>
body{
background:#fff;
    }

    .heading{
padding-top: 30px;
text-align: center;
font-weight: 500;
    }

    profile-area {
padding:30px 0;
    }
    .card {
        box-
shadow: 0 0 30px rgba(0,0,0,0.1);
overflow: hidden;
border-
radius:15px;
margin-top:30px;
    }
    .img1
img{
height:100px;
margin-left:
auto;
margin-right:
auto;

/* border-top-right-radius:15px;
border-top-left-radius:15px; */
width:100%;
    }

    .img2 img {
margin-left:
auto;
text-
align: center;
```

```

border-radius: 50%;
    width: 100px;
}
    . card: hover .img2 img {
border-color:bg-danger;    transition:.7s
    }
main-text {
padding: 30px 0;
    text-align:
center;
    /* background-color: #dc3545; */
}
    . main-text h2{
top:22px;    text-
transform: uppercase;
font-weight: 900;
font-size:20px;    margin: 0 0
10px;    }    . main-text p {
    font-size:16px;
padding: 0 35px;
    }
    . space {
margin-bottom:20px;
    }
</style>
{% endblock %}

{% block link %}
<link rel="stylesheet" href="/static/home.css">

{% endblock %}

{% block content %}

```

```

<div class="landing">
    <div class="landing-image" data-aos="fade-down" data-
aosduration="2000">
        
    </div>
    <div class="landing-text" data-aos="fade-up" data-aos-duration="1000">
<h1>A DROP FOR YOU!AN OCEAN FOR SOMEONE ELSE...
        DONATE PLASMA SAVE SOMEONES LIFE.</h1>
    <div class="btn btn-danger" style="background-color: #ffffff;">

```

```
<a href="{{ url_for('signin') }}" style="text-decoration: none;"><span
style="color: #000000; font-size: size 6vw;">Donate Plasma</a>
</div>
```

```
</div>
```

```
</div><br><hr>
```

```
<br>
```

```
<h1 style="text-align: center; margin-top: 10px;">
Know more about Plasma</h1>
```

```
<div class = "profile-area">
```

```
<div class = "container">
```

```
<div class="row">
```

```
<div class = "col-12 col-md-6 col-lg-6">
```

```
<div class = "card">
```

```
<div class="img1"></div>
```

```
<div class = "main-text card-body">
```

```
<h2 class="card-title">What is Plasma? </h2>
```

```
<p class="card-body">The liquid portion of whole blood
known as plasma contains the suspended cellular components. It has
more proteins, which help the blood coagulate and fight infection.
Plasma from blood group AB donors is known as AB plasma. Because
it is suitable for all recipients, regardless of blood group,
it is known as "universal donor" plasma. </p>
```

```
</div>
```

```
</div>
```

```
</div>
```

```
<div class = "col-12 col-md-6 col-lg-6">
```

```
<div class = "card">
```

```
<div class="img1"></div>
```

```
<div class = "main-text card-body">
```

```
<h2 class="card-title">What is Plasmapheresis? </h2>
```

```
<p class="card-body">Plasma is typically isolated from whole blood and
collected via a process called plasmapheresis. Blood enters a machine
containing a sterile, disposable plastic kit through a single needle inserted
into an arm vein. #dc3545 blood cells and other components of your
blood is returned to you through the same needle after the plasma has
been separated and routed out into a special
```

```
bag. </p>
```

```
</div>
```

```
</div>
```

```
</div>
```



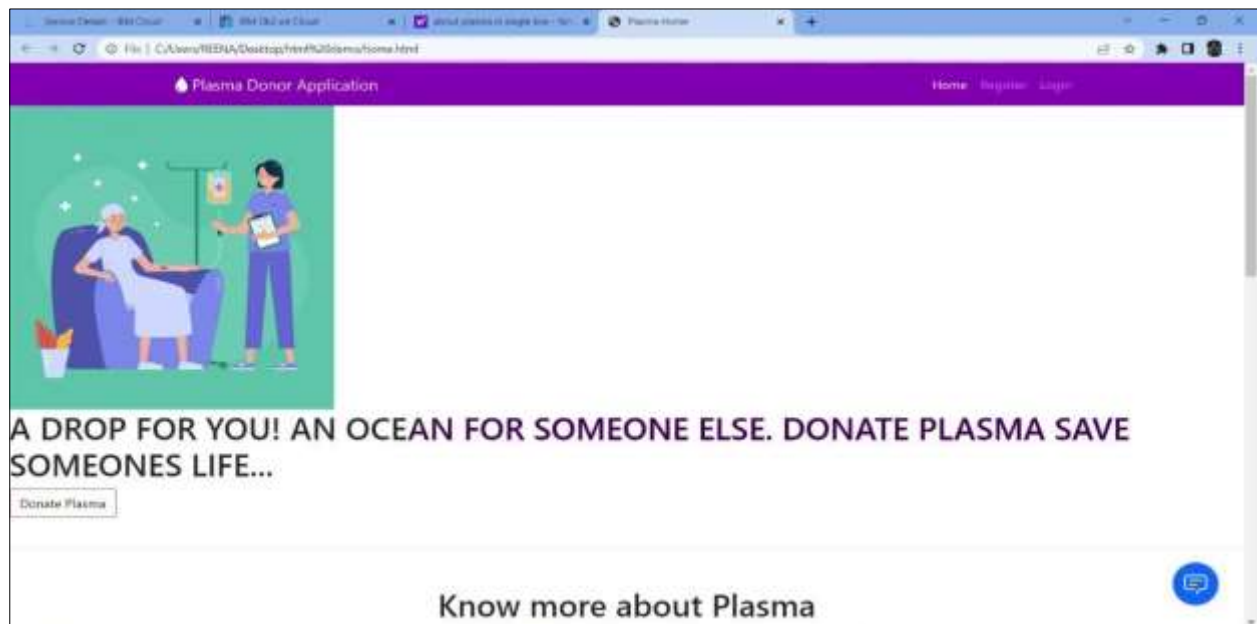
```
<div class = "col-12 col-md-6 col-lg-6">
  <div class = "card">
    <div class="img1"></div>
    <div class = "main-text card-body">
      <h2 class="card-title">Is Plasmapheresis Safe? </h2>
      <p class="card-body">Absolutely. All plastics and needles that come into
touch with you are used just once before being disposed, and the machine
and the operation have been examined and approved by the Food and Drug
Administration (FDA). There is no chance of returning the incorrect blood
to you since at no point during the procedure is the blood being
returned to you removed from the needle in your arm. </p>
    </div>
  </div>
</div>
```

```
<div class = "col-12 col-md-6 col-lg-6">
  <div class = "card">
    <div class="img1"></div>
    <div class = "main-text card-body">
      <h2 class="card-title">How Long Does Plasmapheresis Take?
</h2>
      <p class="card-body">The plasmapheresis process lasts for
about 40 minutes, but the staff will need an additional 20 minutes to
get your medical history. The experience will be made as delightful
and peaceful as possible. </p><br><br>
    <br>
  </div>
</div>
```

```
<div class = "col-12 col-md-6 col-lg-6">
  <div class = "card">
    <div class="img1"></div>
    <div class = "main-text card-body">
      <h2 class="card-title">How Do I Prepare to Donate Plasma?
</h2>
      <p class="card-body">Be careful to get some rest and eat
a nutritious breakfast the day before your plasma donation appointment.
Drink a lot of water, but stay away from alcohol, coffee,
and tea because these can dehydrate you. Choose juice or water instead.
Before donating plasma, you shouldn't consume anything greasy or oily as
this may lower the quality of your plasma. </p>
    </div>
  </div>
```

```
</div>
</div>
<div class = "col-12 col-md-6 col-lg-6">
  <div class = "card">
    <div class="img1"></div>
    <div class = "main-text card-body">
      <h2 class="card-title">Does donating plasma hurt? </h2>
      <p class="card-body">Plasma donation shouldn't be
harmful. The experience of giving plasma should be the same as giving
blood normally. When the needle is inserted, you might experience some
stinging, but after that, the staff will make every effort to keep you
comfortable throughout the donation process. </p><br>
      <br>
    </div>
  </div>
</div>
</div>
</div>
</div>
</div>
</div>
```

```
{% endblock %}
```



## 7.2 FEATURE 2:

### DONORPAGE.HTML

```
{% extends 'base.html'%}
```

```
<!--title tag-->
```

```
{% block title %}
```

```
<title>Plasma-Donor</title>
```

```
{% endblock %}
```

```
<!--Donor Content-->
```

```
{% block content %}
```

```
<!--Donor table-->
```

```
<div class="container mt-3">
```

```
<div class="row justify-content-center">
```

```
<div class="col-sm-12 ">
```

```
<div class="msg">{{ msg }}</div>
```

```
<div class="">
```

```
<div class="">
```

```
<h6 style="text-align: center; margin-top: 50px; color:
#dc3545;">Note: Please note the donor email from the table you want to
request.</h6>
```

```
<table class="table table-hover table-bordered" style="margin:100px 0px;
text-align: center;">
```

```

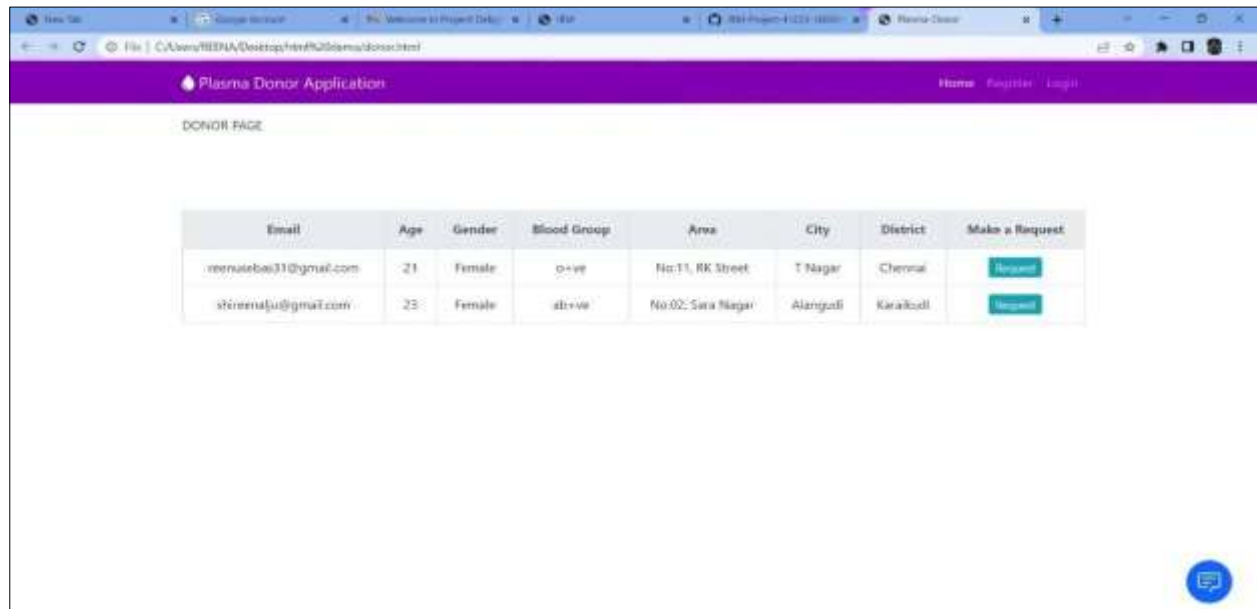
</thead>
<tbody>


{% endfor %}

</tbody>
</table>
</div>
</div>
</div>

```

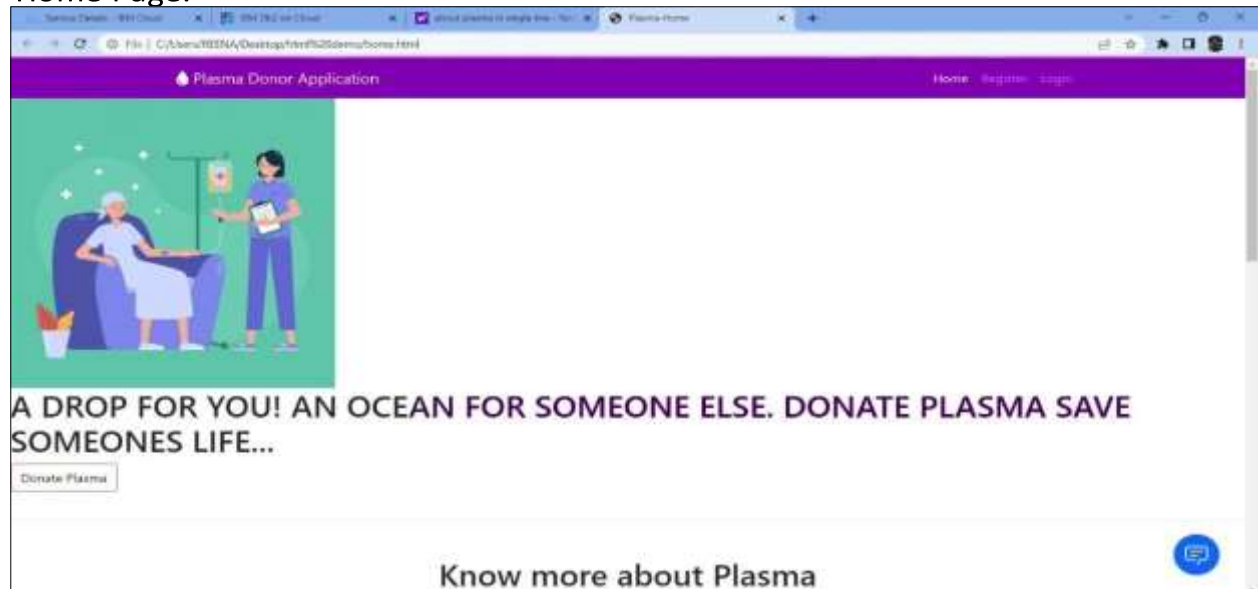
</div>  
</div>  
{% endblock %}



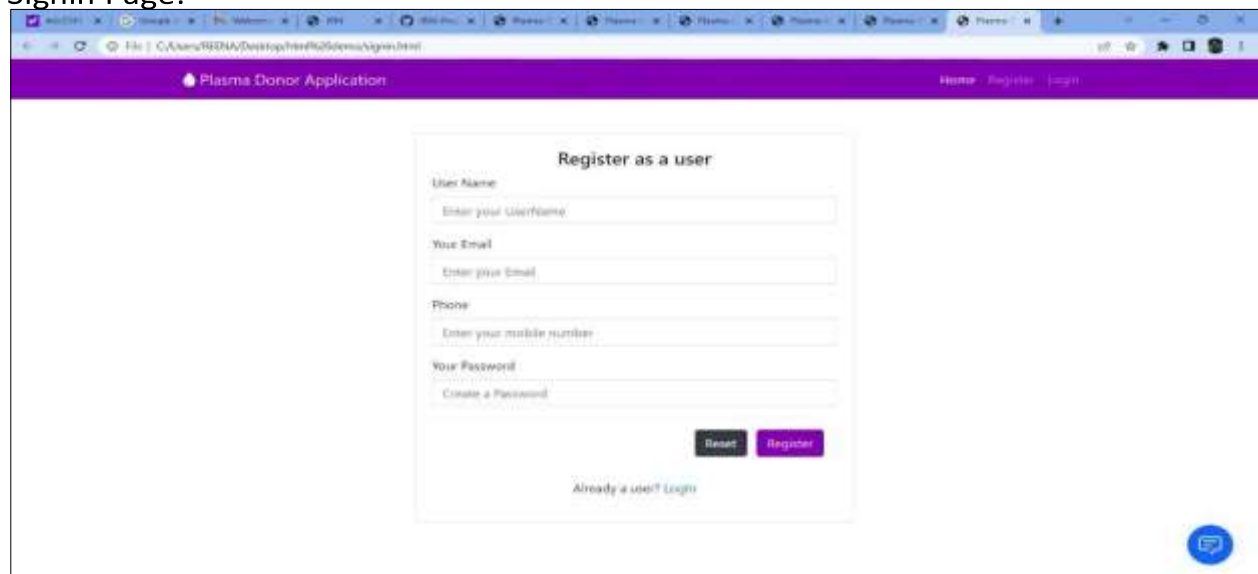
## CHAPTER-8 TESTING

### 8.1 TEST CASES:

#### Home Page:



#### Signin Page:



#### Login Page:

Plasma Donor Application

Home Register Login

### Login using UserName and Password

Donor  
User Name  
Enter UserName

Password  
Enter Password

Forgot Password

Login

Don't have an account Register here

## Donor Page:

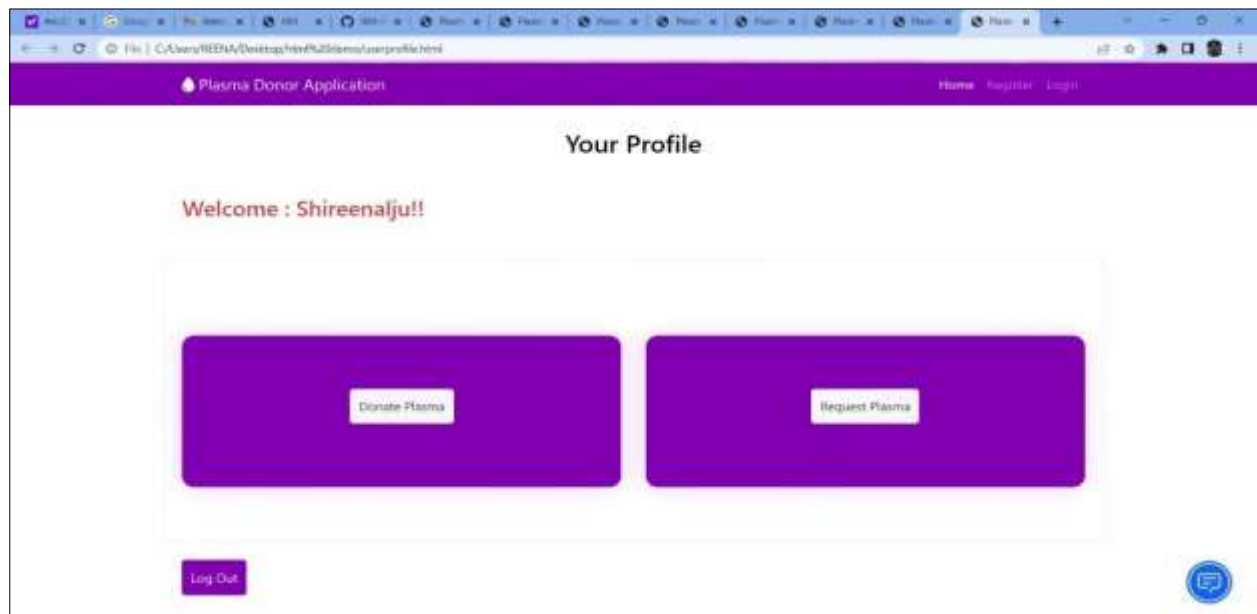
Plasma Donor Application

Home Register Login

DONOR PAGE

Email	Age	Gender	Blood Group	Area	City	District	Make a Request
seemusethas31@gmail.com	21	Female	o+ve	No.11, RK Street	T Nagar	Chennai	Request
shireenafu@gmail.com	28	Female	ab+ve	No.02, Sara Nagar	Alangudi	Keraladi	Request

## User Profile Page:



### Request For Plasma:

This screenshot shows the 'Request for Plasma' form within the Plasma Donor Application. The form is titled 'Request for Plasma' and is located under the 'Donor Information' section. It contains several input fields for donor details: 'Enter Donor Mail' (with a placeholder 'Enter Donor mail from the table'), 'Hospital Name' (with a placeholder 'Enter Hospital Name'), 'Full Name' (with a placeholder 'Enter your fullName'), 'Mobile Number' (with a placeholder 'Enter your Mobile Number'), 'Your Mail' (with a placeholder 'Enter your Email'), 'Age' (with a placeholder 'Enter your Age'), 'Gender' (a dropdown menu with 'Select your Gender'), 'Blood Group' (a dropdown menu with 'Select your blood group'), 'Area' (with a placeholder 'Enter your Area Name'), 'City' (with a placeholder 'Enter your City Name'), and 'District' (with a placeholder 'Enter your District Name'). At the bottom right of the form, there are two buttons: 'Reset' and 'Request'.

### Donating Plasma Page:



Plasma Donor Application

Home Register Login

### Donating Plasma

Full Name

Mobile Number

Email

Age


Gender

Blood Group

Area

City

District



Plasma Donor Application

Home Register Login

Plasma Donor App



Thank you for donating plasma.





## CHAPTER-9

### RESULTS

#### 9.1 PERFORMANCE METRICS:

- Sign Up New user or donor can create an account to use in the blood/plasma donor application and create a password for account verification and create an identity.
- Sign In Donor Sign In to the account for viewing or editing location details and any other personal information.
- Account Verification If donor changes their password or if they forget the password then we have to verify their account using mail verification.

## CHAPTER-10

### ADVANTAGES & DISADVANTAGES

#### ADVANTAGES:

- Speed
  - This website is fast and offers great accuracy as compared to manual registered keeping.
- Maintenance
  - Less maintenance is required.
- User Friendly
  - It is very easy to use and understand. It is easily workable and accessible for everyone.
- Fast Results
  - It would help you to provide plasma donors easily depending upon the availability of it.

#### DISADVANTAGES:

- Internet
  - It would require an internet connection for the working of the website.
- Auto-Verification
  - It cannot automatically verify the genuine users.

## CHAPTER-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 corona positive 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

## CHAPTER-12

PNT2022TMID45345 33 banks improve their services and progress from traditional to userfriendly frameworks.

## CHAPTER-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.

