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1.INTRODUCTION

Project Overview: -

Patients with severe liver disease or numerous clotting factor deficits, as well as those who have undergone trauma, burns, or shock, frequently get plasma. The patient's blood volume is increased as a result, which can aid in blood coagulation and help to prevent shock. The number of people with Covid-19 infection has increased, as has the demand for the plasma of patients who have recovered. The antibodies that are already in our systems can aid someone in overcoming the infection.

Plasma donation saves lives, and donors' and blood/plasma facilities' communication is key to this. Smart apps are increasingly viewed as a crucial communication tool, and if they are created with the users' requirements and preferences in mind, plasma donation could make the best use of them.

Purpose: -

- In our opinion, we want to make a user-friendly application for those who need plasma or want to give plasma to anyone who needs it
- However, areas of concern like privacy and secrecy should be considered during design and development. It was discovered that getting older may make donors less likely to use apps. If somebody requires a plasma donor, they use this method.
- Both the administrator and the user of this system have the ability to request a plasma.
- To donate plasma, a person must first register in our application by entering the necessary details, such as name, age, blood type, phone number, and location.
- Patients can fill out the form to request plasma if they need it. Patients can call donors directly by getting their contact information from the application.
- The user has the option of searching near where they currently reside. • Anyone can find the greatest number of plasma donors in the shortest amount of time by conducting just one search.

2. LITERATURE SURVEY

Existing Problem:

In the majority of the current plasma donor applications, the system is shut down for general plasma donation and is primarily focused on COVID-19 patients for plasma donation. This creates a single point of failure and prevents Android mobile users from inserting or seeing details. The majority of user information is still unconfirmed, making it challenging to identify bogus users. The user interface of the application is not intuitive, and in order to engage with it, a device running the Android operating system and a working internet connection are required.

References: -

YEAR	TITLE	AUTHOR(s)	TECHNIQUE(s)	PROS	CONS
2022	Instant Plasma Donor Recipient connector web application	Kalpana Devi Guntoju, Tejaswini Jalli, Sreeja Uppala, Sanjay Malliseti	Web Technologies, API, Database	The Donor needs to upload their recovered COVID-19 Certificate and it required to be verified by the blood bank. It is a user-friendly application. It will help people to find plasma easily.	This system is closed for general plasma donation and mainly focused on COVID-19 patients for plasma donation
2021	BDoor App-Blood Donation Application using Android Studio	S Periyana yagi, A Manikandan, M Muthukrishnan, and M Ramakrishnan	Android, FlutterUI, Dart, Firebase, Decision tree algorithm	The Donor details are verified before they allow to donate and have to be authorised by institution. The Verification and validation are done in Email base.	The android mobile user will not be able to insert or view details if the server goes down. Thus, there is a disadvantage of single point failure.

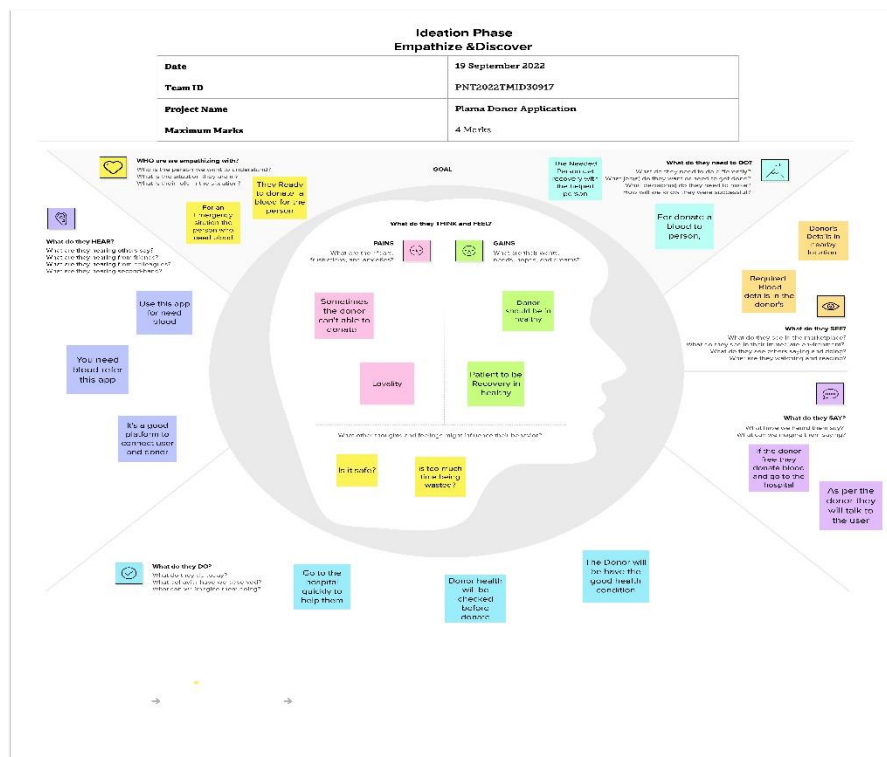
2020	Lifesaver E-Blood Donation App Using Cloud	Rishab Chakrabarti, Asha Darade, Neha Jadhav, Prof. S. M. Chitalkar	E-health, GPS, Blood bank database, Cloud Computing	Reduction in the errors of blood bank using most eligible donor method. Direct Communication Between donor and the person in need of blood During the Emergency situation.	The user given details are maintained unverified.
2020	Developing a plasma donor application using Function-as-a-service in AWS	Aishwarya R Gowri	Serverless, aws, plasma theory, covid19, dynamoDB, cloud	The efficient way of finding plasma donor for the infected people. Aws lambda function is used and to deploy the application AWS EC2 service is used.	The user interface can be better than now.
2019	D'WORLD: Blood Donation App Using Android	A. Meiyappan, K. Loga Vignesh, R. Prasanna, T. Sakthivel	Android, Global Positioning System (GPS), Mobile Computing	When the giver gives the blood, it will naturally evacuate the contributor detail for next three months. It additionally confirms with the Department of Health and Welfare to guarantee the benefactor medical case history.	The user must have a device with android operating system with an active internet connection to interact with this application.
2018	Automated blood bank system using Raspberry PI	Ashlesha C. Adsul, V. K. Bhosale, R. M. Autee	Raspberry Pi, Embedded Blood Bank, GSM, Android	When there is urgent need for blood then if this model is adopted the caller is immediately connected to the donor	Tackling the fake users.

Problem Statement Definition: -

Plasma donation saves lives, and donors' and blood/plasma centres' communication is key to this. Smart apps are increasingly viewed as a crucial communication tool, and if they are created with the users' requirements and preferences in mind, plasma donation could make the best use of them. We intend to provide an application that is user-friendly for people who require plasma for anyone who is in need. However, during design and development, areas of concern including privacy and secrecy should be taken into account. Age was noted as a contributing factor that might lessen contributors' propensity to use apps. The contribution team concentrated on the app's instructional elements and stressed the value of data, notifications, and reminders sent to donor via the app.

3. IDEATION & PROPOSED SOLUTION

3.1. Empathy Map Canvas:-



Ideation & Brainstroming:-

Serious medical issues can be treated with plasma. For this reason, blood drives are held to solicit donations of plasma and blood. One of the most well-known techniques known as plasma treatment, plasma is used to cure various incurable diseases. As there were no vaccines available to treat patients who had been exposed to the coronavirus, the need for plasma increased dramatically. Plasma therapy had a high rate of success, but there were very few donors available, so it was crucial to learn as much as possible about the plasma donors in these circumstances. It would be helpful to save the contributor data and provide information about the ongoing donors because it will help clients find the crucial contributor data faster and save time.

Proposed Solution:-

This system's goal is to use an online application to link donors and patients. Users of this application may post requests for plasma donations or requests for services.

The fundamental solution is to establish a centralised system to keep track of current and previous Plasma Donation Events. The suggested remedy is as follows: Application contains two roles:

♣ Admin

♣ User

User:

- If the user wants to donate or receive they have to register with their personal

details.

- Following a user's successful registration.
- The user receives an email upon successful registration.
- The user will be taken to the home page after a successful registration.
- If they want to be a donor or a recipient, they must press.
- If the user is a donor, they must fill out the donation interest form with their name, blood group information, location, the date they last contributed, a phone number, and an email address.
- After submitting the donation form, the donor will be directed to a page where they can obtain the eCertificate. The user can raise their request and get in touch with the donor directly if they are the recipient and can see the list of available donors.

Admin:

- Admin can login using their credentials.
- Admin can edit the request.
- Admin can delete the request.
- Admin can add volunteers.

Problem Solution Fit:-

Uniqueness:-

Users can easily grasp a user interface. The application is available anytime, anywhere.

The user can use this application to raise a request and directly contact the donor to ask them to donate the plasma if they urgently need it for their treatment but the plasma is not available in the nearby hospitals. Hospitals may also put out a call for donors. Someone who wants to donate blood and plasma but is unsure how to do so uses this application, which is easy to use and will help save many lives. Many of them now have smartphones, so they can download this app and use it to help save lives.

Social Impact / Customer Satisfaction:-

We are living in a modern world and everything can be accessed online. Even though there are many applications, 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 in this activity. It increases the number of donors.

Business Model (Revenue Model):-

Everyone has access to this programme. It's free. Due to the difficulty in locating donors who match a certain blood lot, this application allows users to add donors and store their data in a data collection. The need for plasma is rising today. Anyone with a basic understanding can use this software. This can be applied at any time, anywhere. Working with the government, we can develop a programme to assist people in need of plasma.

Scalability of the Solution :-

Instead of scouring the entire world for plasma donors, this programme enables users to find donors while sitting at home. When there is an emergency, plasma requests that everyone sends a message. When a donor is prepared to donate, the recipient is informed. Receiver may get in touch with the donor. This app helps donors find suitable donors quickly and easily by letting them know if they are eligible to donate.

4. REQUIREMENT ANALYSIS

Functional Requirements:-

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
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

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 donorsystem must be well-designed and welcoming.

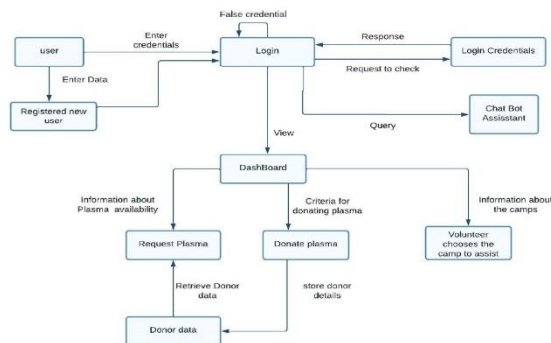
NFR-2	Security	Data storage is required by security systems, just like it is by many other applications. Databases are able to keep all the donor information that is viewed by applications. It must be secured with email Id and password.
NFR-3	Reliability	The system has the ability to work all the times without failures apart from network failure. A donor can have the faith on the system. The authorities will keep 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

Data Flow Diagrams: -

Data Flow Diagrams:

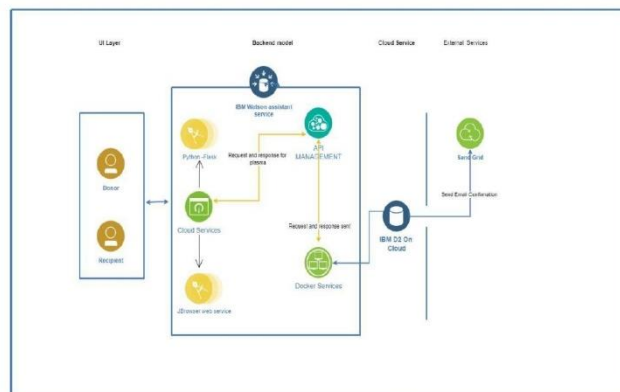
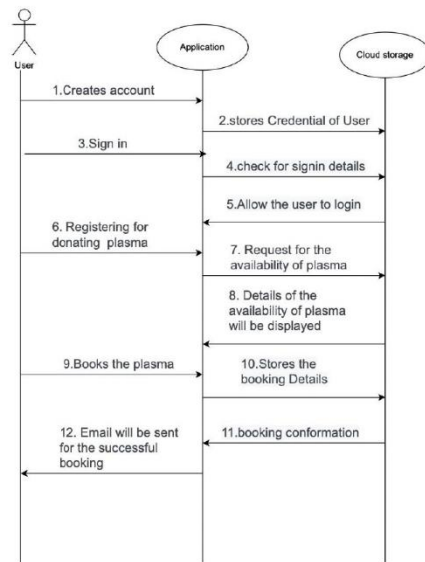
The classic visual representation of how information moves through a system is a data flow diagram (DFD). A tidy and understandable DFD can graphically represent the appropriate quantity of the system demand. It demonstrates how information enters and exits the system, what modifies the data, and where information is kept.



Solution & Technical Architecture: -

Solution Architecture: -

Technical Architecture:-

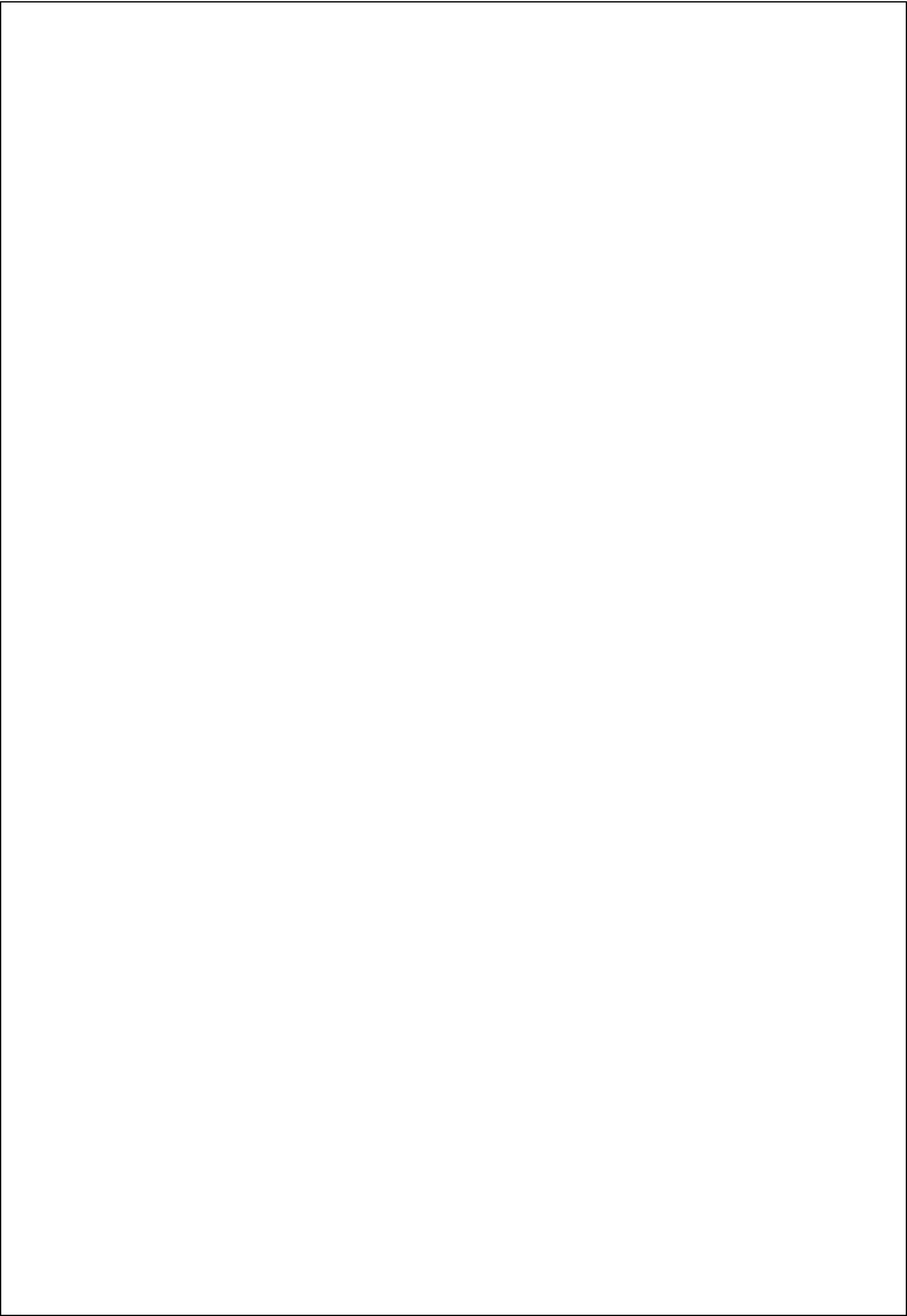


User Stories

Sprint	Functional Requirement (Epic)	User Story Number	User Story/Task	Story Points	Priority
Sprint-1	Registration	USN-1	Users can sign up for the application by providing their email address, password, and password confirmation.	3	High
Sprint-1	Email verification	USN-2	Once a user registers for the application, they will receive a confirmation email.	3	High
Sprint-1	Login	USN-4	The user can access the program. entering your email and password	2	High

Sprint-2	Plasma Request	USN-7	A verified clinic may submit a request for plasma in the application.	3	High
Sprint-2	Verification of Donor's details	USN-8	Only genuine donors will be able to use the application because we, the administrators, will verify the information provided by the donors.	2	Medium
Sprint-3	Accept the donation request	USN-9	A registered donor will receive a notification inviting them to accept the plasma request for their particular blood type.	3	High
Sprint-3	Communication Channel	USN-10	Within the application, the patient can directly communicate with the donor.	3	Medium
Sprint-3	Administrator	USN-12	After verification, an admin will enter the registered donor's information into the database.	3	High

Sprint-4	About	USN-15	In the dedicated about section, a new user can read about plasma and plasma donation.	2	Medium
Sprint-4	Administrator	USN-16	After proper verification, an admin will approve each plasma transaction in the application.	3	High



6. PROJECT PLANNING AND SCHEDULING

Sprint Planning

A strong Agile development team is built on sprints. And the more ready you are before a sprint, the more probable it is that you will achieve your objectives. Planning for spring can assist to prioritise efforts, reduce unexpected events, and (hopefully) ensure that better code is deployed. The sprint, the stage where ideas transform into innovation and valued goods come to life, is the major event in the agile approach. Agile sprints have the potential to be very productive and collaborative. They can also be disorganised and ineffective if there is poor planning and direction. Making a sprint schedule is one of the most crucial things you can do to guarantee the success of your efforts because of this. We categorized the sprint as 4 phases for creating the application

- Sprint 1 is about creating the login page and the register page.
- Sprint 2 is about sending the confirmation mail to the users during registration.
- Sprint 3 is about as a user, can log into application by entering email and password.
- Sprint 4 is about as user, can register and make request for plasma donation via portal

Guidelines:

1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services
5. Indicate interface to machine learning models (if applicable)

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The user register and login. See the UI.	HTML, CSS, Python Flask
2.	Data maintenance	Store , maintain ,retrieve the user's details.	MYSQL
3.	Chatbot	Clarify user queries.	IBM Watson service
4.	Confirmation Email	Sending the confirmation email to users they have registered successfully.	SendGrid

5.	Cloud Database	Cloud database to store plasma information and View Plasma information.	IBM DB2
6.	File Storage	File storage requirements	IBM Block Storage
7.	Infrastructure (Server / Cloud)	To deploy the application on Local System	Kubernetes

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Python Flask frameworks is used.	Python Flask
2.	Security Implementations	Mandatory Control(MAC) and kubernetes is used.	SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	3-Tier Architecture is used.	Web server-HTML,CSS Application Server-Python Flask Database Server-IBM DB2
4.	Availability	Using Load Balancer to distribute network traffic across Servers.	IBM Load Balancer
5.	Performance	User Friendly UI. Request and Response is faster.	IBM Content Delivery Network

Sprint Estimation and Delivery Schedule:

A sprint estimation shows how much effort a series of tasks require. It's based on assumptions, requirements, and dependencies of a project.

The Benefits of Agile Estimation



Improve
decision-making
and sprint planning



Achieve better
coordination
among teams



Support risk
management for
on-time, quality
delivery

Use the below template to create product backlog and sprint schedule

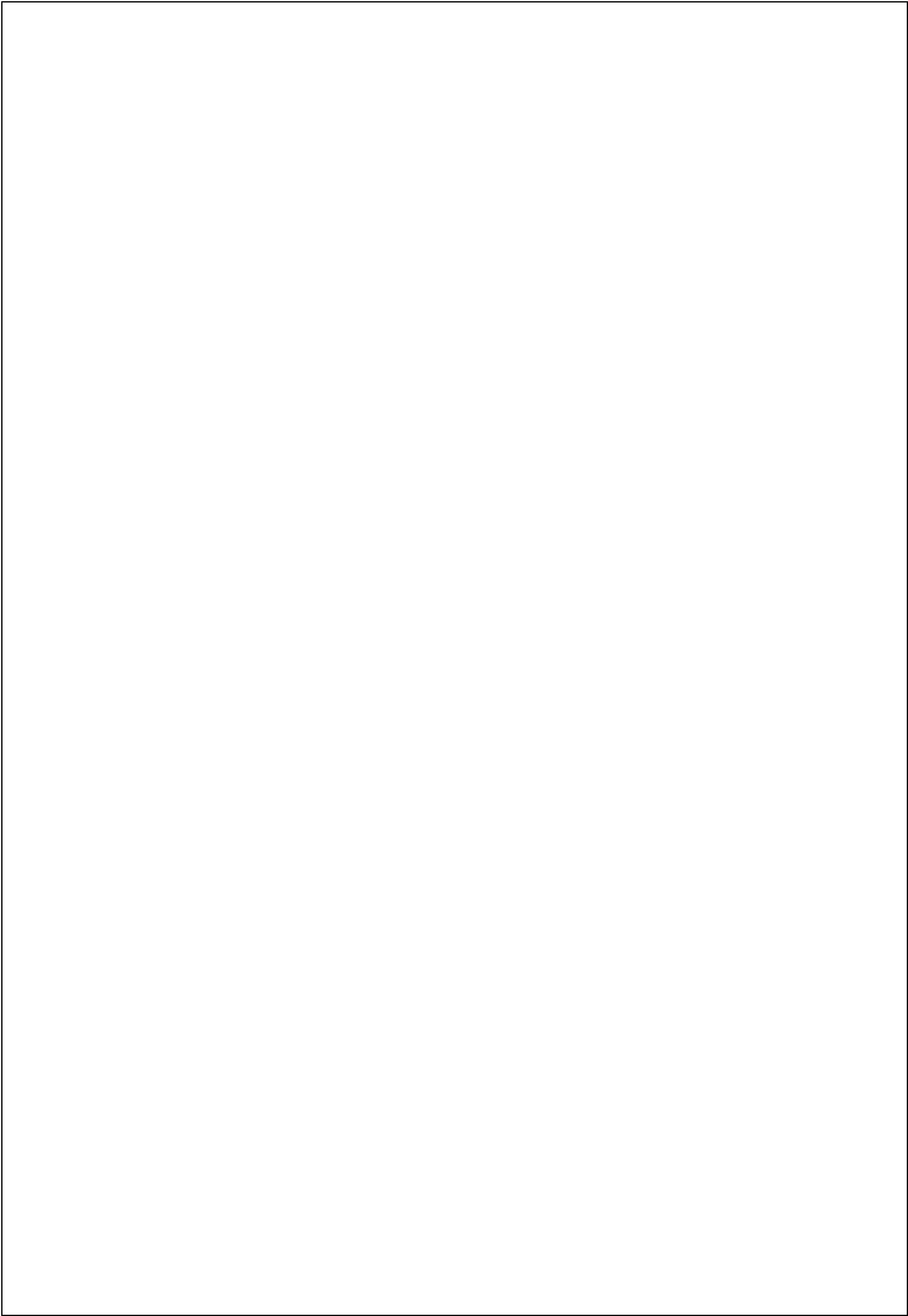
Sprint	Functional Requirement (Epic)	User Story Number	User Story/Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	Users can sign up for the application by providing their email address, password, and password confirmation.	3	High	sabarivigneshwaran Santhoshkumar Shanmugam parthasarathi
Sprint-1	Email verification	USN-2	Once a user registers for the application, they will receive a confirmation email.	3	High	sabarivigneshwaran Shanmugam
Sprint-1	Login	USN-4	The user can access the program. entering your email and password	2	High	sabarivigneshwaran Santhoshkumar

Sprint-2	Plasma Request	USN-7	A verified clinic may submit a request for plasma in the application.	3	High	Santhoshkumar Shanmugam parthasarathi
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Sprint-3	Accept the donation request	USN-9	A registered donor will receive a notification inviting them to accept the plasma request for their particular blood type.	3	High	sabarivigneshwaran Santhoshkumar
Sprint-3	Communication Channel	USN-10	Within the application, the patient can directly communicate with the donor.	3	Medium	Santhoshkumar Shanmugam sabarivigneshwaran
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Sprint-4	About	USN-15	In the dedicated about section, a new user can read about plasma and plasma donation.	2	Medium	sabarivignesh waran Santhoshkumar
Sprint-4	Administrator	USN-16	After proper verification, an admin will approve each plasma transaction in the application.	3	High	Shanmugam parthasarathi

ProjectTracker,Velocity&BurndownChart:(4Marks)

Sprint	Total StoryPoints	Duration	SprintStartDate	Sprint End Date(Planned)	Story PointsCompleted (ason Planned EndDate)	Sprint Release Date(Actual)
Sprint-1	18	6Days	24Oct2022	29Nov2022	18	29Oct2022
Sprint-2	20	6Days	31Oct2022	05Nov2022	20	05Nov2022
Sprint-3	18	6Days	07Nov2022	12Nov2022	18	12Nov2022
Sprint-4	18	6Days	14Nov2022	19Nov2022	18	19Nov2022



7. CODING & SOLUTIONING

SendGrid

Through the use of SendGrid, a cloud-based SMTP provider, you can send emails without worrying about maintaining email servers. The technical details are all handled by SendGrid, including infrastructure scaling, ISP outreach, reputation monitoring, whitelist services, and real-time analytics.

Email can be sent using SendGrid's SMTP relay or Web API, two different methods. Numerous language client libraries are available from SendGrid. This method of SendGrid integration is recommended. The Web API is generally advised if you decide to use SendGrid without a client library because it is faster, offers some encoding benefits, and is typically simpler to use. SMTP comes with a lot of features by default but is more difficult to set up.

Web API

- The Web API has some advantages over SMTP:
- If your ISP blocks all outbound mail ports and your only option is HTTP.
- 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.
- If you do not control the application environment and cannot install and configure an SMTP library.
- If you build a library to send email, developing against a web API provides quicker development.

SMTP Relay

- 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.
- Change your SMTP username and password to your SendGrid credentials.
- Set the server host name to smtp.sendgrid.net
- 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='<strong> {} </strong>'.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)
```

Database Schema

The screenshot displays a database management tool interface. At the top, there is a navigation bar with tabs: Load Data, Load History, Tables (selected), Views, Indexes, Aliases, MQTs, Sequences, and Application objects. Below the navigation bar is a search bar labeled 'Find schemas or tables' and a 'Refresh' button. The main content area is divided into two panels. The left panel, titled 'Schemas', contains a table with columns 'Name', 'Type', and 'Tables'. It lists one schema: 'YGG09863' of type 'User' with 4 tables. The right panel, titled 'Tables', contains a table with columns 'Name', 'Schema', and 'Properties'. It lists four tables: 'DONORS', 'JOBS', 'REQUESTED', and 'USERS', all belonging to the 'YGG09863' schema. Both panels show a 'Total' and 'selected' count at the bottom.

Schema	Name	Type	Tables
YGG09863	YGG09863	User	4

Table	Schema	Properties
DONORS	YGG09863	...
JOBS	YGG09863	...
REQUESTED	YGG09863	...
USERS	YGG09863	...

IBM Db2 on Cloud

Load DataLoad HistoryTablesViewsIndexesAliasesMQTsSequencesApplication objects

Find schemas or tables

Refresh

Schemas

Tables

New table

Filter

Sort

Columns

Table definition

DONORS

Approximate 2 rows (32.0 KB)
Updated on 2022-10-29 08:08:08

Name	Data type	Nullable	Length	Scale
USERNAME	VARCHAR	Y	32	0
EMAIL	VARCHAR	Y	32	0
PASSWORD	VARCHAR	Y	32	0
CITY	VARCHAR	Y	32	0
INFECT	VARCHAR	Y	32	0

View data

Tables

Name	Schema	Properties
DONORS	YGG09863	...
JOBS	YGG09863	...
REQUESTED	YGG09863	...
USERS	YGG09863	...

Total: 4, selected: 0

Load DataLoad HistoryTablesViewsIndexesAliasesMQTsSequencesApplication objects

YGG09863.DONORS

Back

Export to CSV

USERNAME	EMAIL	PASSWORD	CITY	INFECT	BLOOD	phone
Maryada	maryada@student.tce.edu	maryada@123	Madurai	uninfected	B Positive	+919080532800
Nitin	maryada@student.tce.edu	nitin@123	Madurai	uninfected	O Positive	+919080532800

IBM Db2 on Cloud

Load DataLoad HistoryTablesViewsIndexesAliasesMQTsSequencesApplication objects

Find schemas or tables

Refresh

Schemas

Tables

New table

Filter

Sort

Columns

Table definition

REQUESTED

Approximate 4 rows (32.0 KB)
Updated on 2022-10-29 06:03:05

Name	Data type	Nullable	Length	Scale
BLOODGRP	VARCHAR	Y	32	0
ADDRESS	LONG VARCHAR	Y	32700	0
NAME	VARCHAR	Y	32	0
EMAIL	VARCHAR	Y	32	0
PHONE	VARCHAR	Y	32	0

View data

Tables

Name	Schema	Properties
DONORS	YGG09863	...
JOBS	YGG09863	...
REQUESTED	YGG09863	...
USERS	YGG09863	...

Total: 4, selected: 2

SQL

Load Data

Load History

Tables

Views

Indexes

Aliases

MQTs

Sequences

Application objects

YGG09863.REQUESTED

Back

Export to CSV

BLOODGRP	ADDRESS	NAME	EMAIL	PHONE
AB Positive	44/24 MAHAL 4TH STREET, 1ST FLOOR , Madurai	Maryada Kumar Lodha D	Maryada Kumar Lodha D@student.tce.edu	+919080532800
AB Positive	44/24 MAHAL 4TH STREET, 1ST FLOOR , Madurai	Maryada Kumar Lodha D	danny@student.tce.edu	+919080532800
B Positive	44/24 MAHAL 4TH STREET, 1ST FLOOR , Madurai	Maryada Kumar Lodha D	maryada@student.tce.edu	+919080532800
B Positive	44/24 MAHAL 4TH STREET, 1ST FLOOR , Madurai	Maryada Kumar Lodha D	maryada@student.tce.edu	+919080532800
select	44/24 MAHAL 4TH STREET, 1ST FLOOR , Madurai	Maryada Kumar Lodha D	danny@student.tce.edu	+919080532800

8. RESULT

Authentication Module

- 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.

Service Provider Module

- Add New Donor

User can be able to register to add donor details.

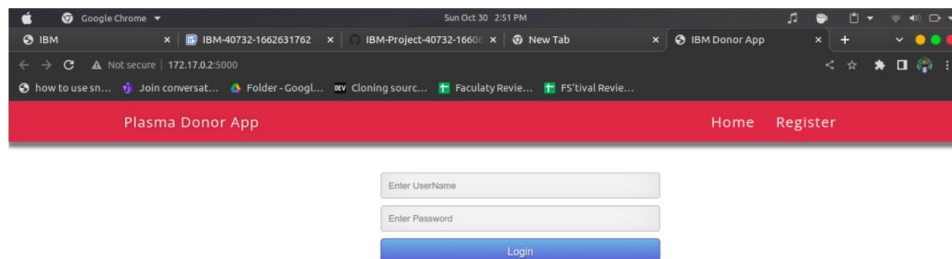
- List All Donor

User can be able to view all Donor who all use our Plasma Donor Application.

- Edit Customer Plan Details

User can be able to edit the existing Donor details as the Donor wish.

Screen Layouts



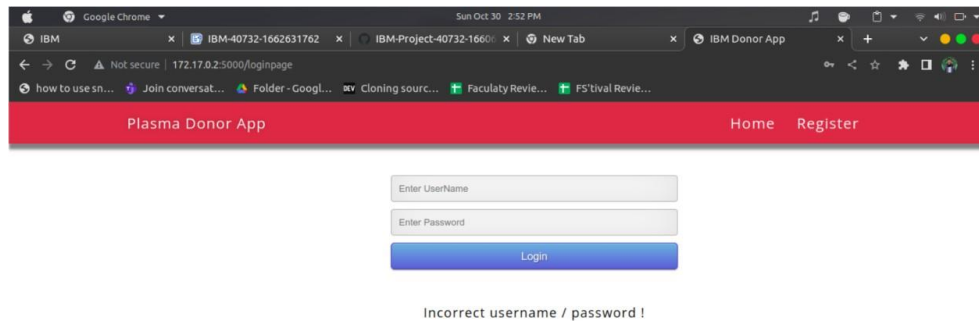
Plasma Donor App

Home Register

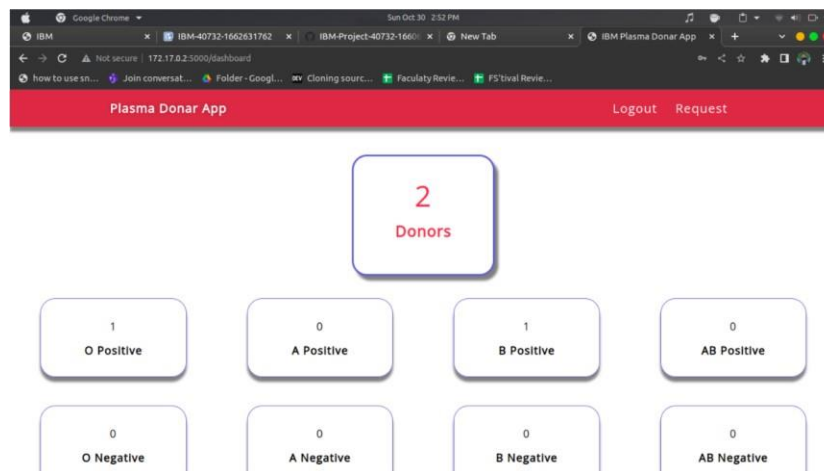
Enter UserName

Enter Password

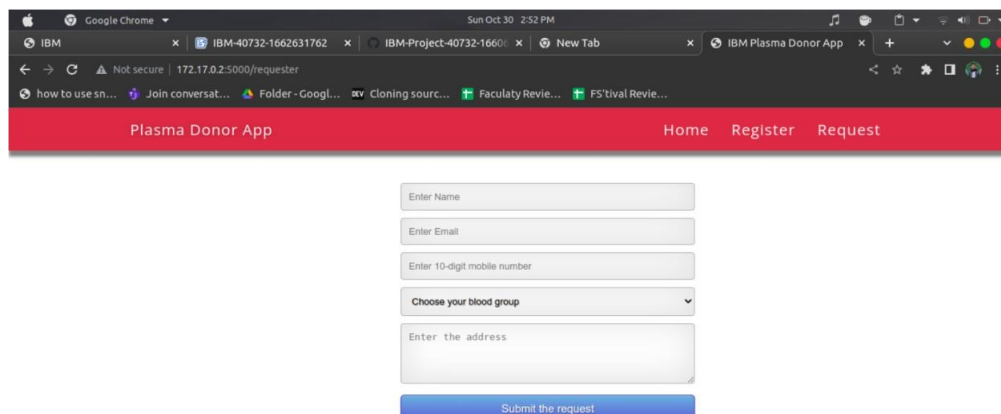
Login



Login page



Home page



Plasma Donor App Home

Enter Your Name

Enter Email

Enter 10-digit mobile number

Enter Your City Name

Select COVID infection status

Choose your blood group

Enter Password

Register

Registration page

The Donors can create an account by entering their email address. The Donor can register using his or her password after registering. The graphic displays the E-mail and Password fields from the login page for Plasma Donors. the donor's profile, where the necessary information must be entered. After registering, the donor is free to continue as needed. The registration page, which is pictured, includes Full Name, Email Address, Last Donation Date, Password, Contact Information, Blood Group, Location, and all other information. Other users can view and display the details of the available donors.

9. 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.

10. CONCLUSION

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 banks improve their services and progress from traditional to user-friendly frameworks.

11. FUTURE SCOPE

By combining Plasma Application with different social network application programme interfaces, this application may be created to further increase user accessibility (APIs). As a result, users can login and register using different social networks. This would increase the number of donors and improve the blood donation process.

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.

12. APPENDIX

- ***GitHub and Source code Link*** - <https://github.com/IBM-EPBL/IBM-Project-40732-1660633417/tree/main/Final%20deliverable/Plasma%20donor%20app%20code>