PLASMA DONOR APPLICATION

A-IBM PROJECT FINAL REPORT

SUBMITTED BY

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IBM PROJECT

PLASMA DONOR APPLICATION

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CHAPTER 1
INTRODUCTION

PROJECT OVERVIEW:

The necessity of blood has become a significant concern in the present context all over the world. Due to a shortage of blood, people couldn’t save themselves or their friends and family members. A bag of blood can save a precious life. Statistics show that a tremendous amount of blood is needed yearly because of major operations, road accidents, blood disorders, including Anemia, Hemophilia, and acute viral infections like Dengue, etc. Approximately 85 million people require single or multiple blood transfusions for treatment.

PURPOSE:

The main goal of our project is to design a user-friendly web application that is like a scientific vehicle from which we can help reduce mortality or help those affected by COVID19 by donating plasma from patients who have recovered without approved antiretroviral therapy planning for a deadly COVID19 infection, plasma therapy is an experimental approach to treat those COVID-positive patients and help them recover faster. Therapy, which is considered reliable and safe. If a particular person has fully recovered from COVID19, theyare eligible to donate their plasma.

CHAPTER 2

LITRETURE SURVEY

S. NO	TITLE	YEAR	TECHNIQUES	PARAMETERS	TOOLS	FINDINGS
1	Life saver E- blood donation application using cloud.	2020 June	GPS facility to locate Donor .	To find the blood Donor when required //search availability of blood in blood blanks //manage the blood donation camp.	Cloud computing.	Internet connection is mandatory and reports are verified.
2	Developing a plasma Donor application using function as a service in AWS		In an AWS function- as- a-services used and Amazon SNS and AWS elastic compute cloud.	Saving and notifying about the current donors, it helps the user to track down the necessary information about the donors.	Amazon Google IBM and Microsoft Azure Cloud Computing services has been used in this application.	Already filtered the active members Here user can be a given as well as borrower.
3	E-blood Bank app for organising and order the blood donation	Jan 2018	Using cloud computing which is developed as SMS mobile based blood management system.	Process the blood data and request electronically collecting blood through collection activity.	GPS for track location and Asterisk hardware for direct call	This app is more organised and it is superfast.

4	Blood donor routine detector using k-nearest neighbours The second in conference on natural Resources and Life service	24 Aug 2019	By Microsoft Excel for data collecting by using waterfall model for process of the system .	It provides the class status of the donor for the specific blood type.	Unified Modifying Language (UML)modelling designed using OOPS concept.	It improves the accuracy of the calculatio ns result on this system.
5	An Android application for volunteer blood donors.	2019 May	Android software stack produced by Google and SQ Lite database.	It determines the nearest one and send them the allows for blood donation.	Android studio using a n t and unto the great build automation platform.	Wrong inputs will affect the project outputs. So it should be rectified.

References:

The Optimization of Blood Donor Information and Management System by Technopedia P. Priya1, V. Saranya2, S. Shabana3, Kavitha Subramani4 Department of Computer Science and Engineering, Panimalar Engineering College, Chennai, India1,2,3,4

[2] MBB: A Life Saving Application Narendra Gupta1, Ramakant Gawande2 and Nikhil thengadi3 1, 2, 3 Final Year, CSE Dept., JDIET, Yavatmal, India.

[3] AN ANDROID APPLICATION FOR VOLUNTEER BLOOD DONORS by Sultan Turhan.

[4] Arif. M. Sreevas. S. Nafseer. K. and Rahul. R. (2012), 'Automated online Blood bank database', India Conference (INDICON), Annual IEEE, Print ISBN: 978-1- 4673-2270-6, pp. 012 - 017.

[4] Spyropoulos. B., Botsivaly. M., Tzavaras. A., and Spyropoulou, P (2009), 'Towards digital blood-banking', ITU-T Kaleidoscope: Innovations for Digital Inclusions, KIDI.E-ISBN: 978-92- 61-12891-3, Print ISBN: 978- 92-61-12891-3, pp. I- 8.

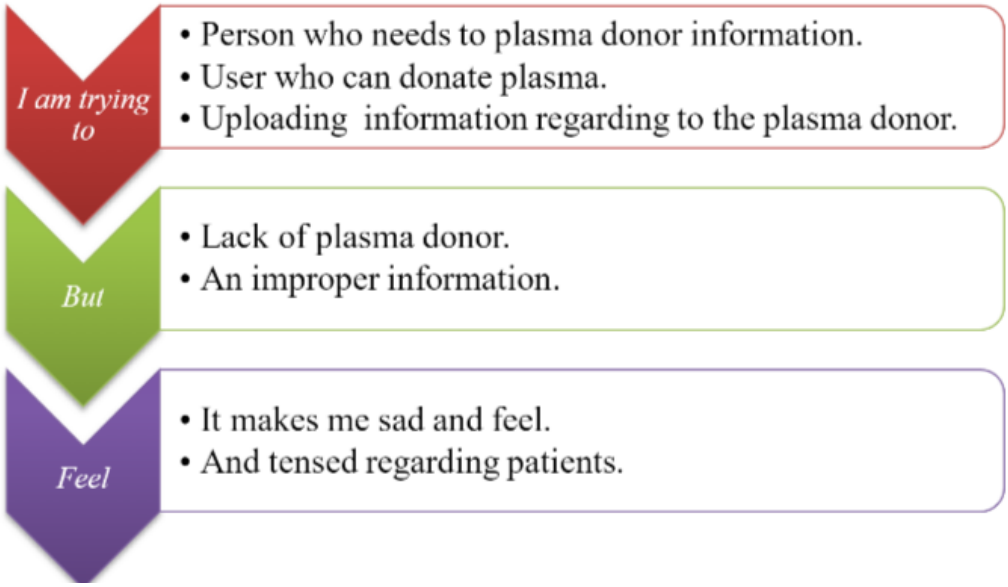
[5] A Survey Paper on E-Blood Bank and an Idea to use on Smartphone Tushar Pandit, Satish Niloor and A.S. Shinde, Dept. of I.T Sinhgad Academy of Engineering, Pune, India .

PROBLEM STATEMENT DEFINITION:

The requirement of plasma became high and the donor count being low. Saving the donor information and helping the need by notifying the current donors would be a helping hand. It is very difficult to find the respective blood group donors when anyone is in need.

In regard to the problem faced, an application is to be built which would take the donor details, store it and inform them upon a request. By using this application, the users can either raise a request for plasma donation or requirement.

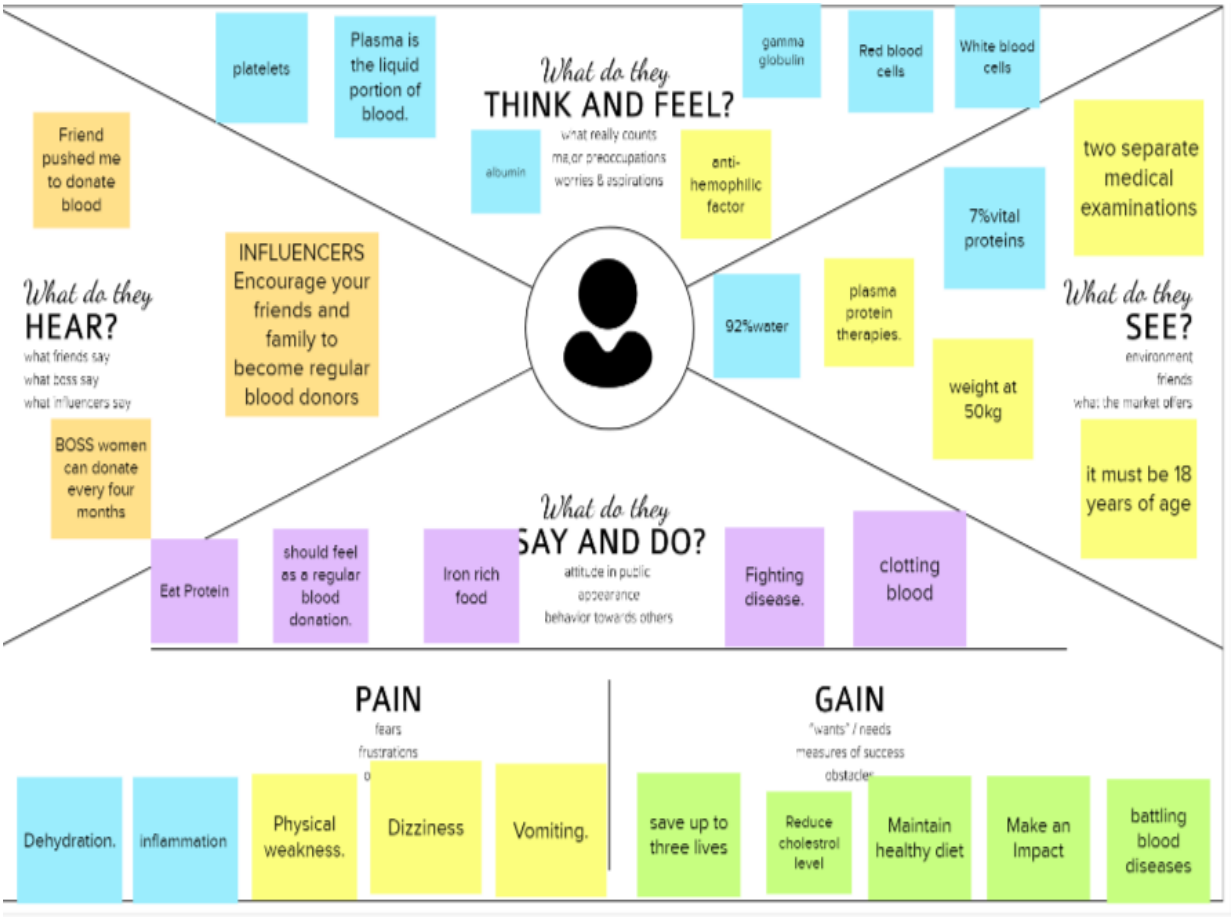
We propose an application where the plasma banks can properly update the stock availability and donor can register themselves to donate the plasma and User can find the plasma availability nearby them.



CHAPTER 3
IDEATION AND PROPOSED SOLUTION

EMPATHY MAP CANVAS:

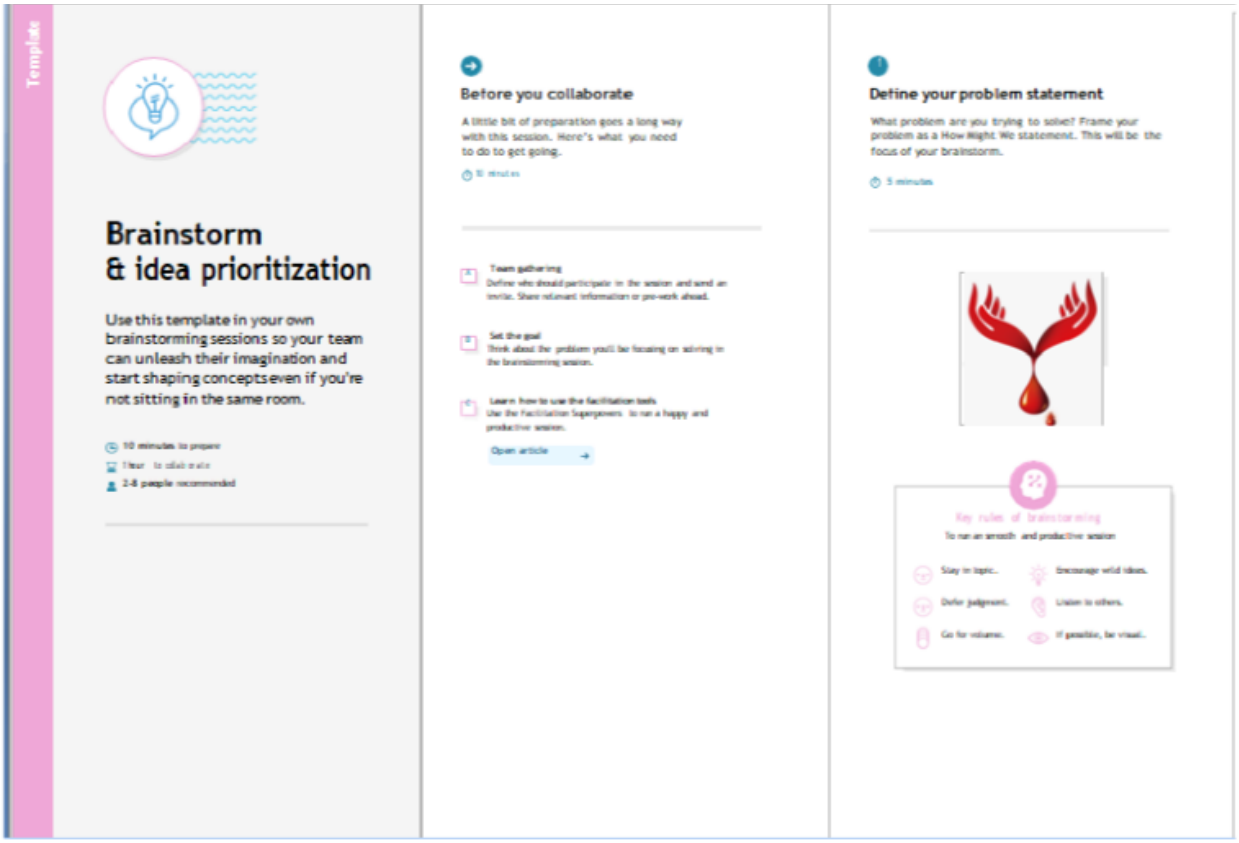
An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviours and attitudes. It is a useful tool to helpsteams betterunderstand their users Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user'sperspective along with his or her goals and challenges.



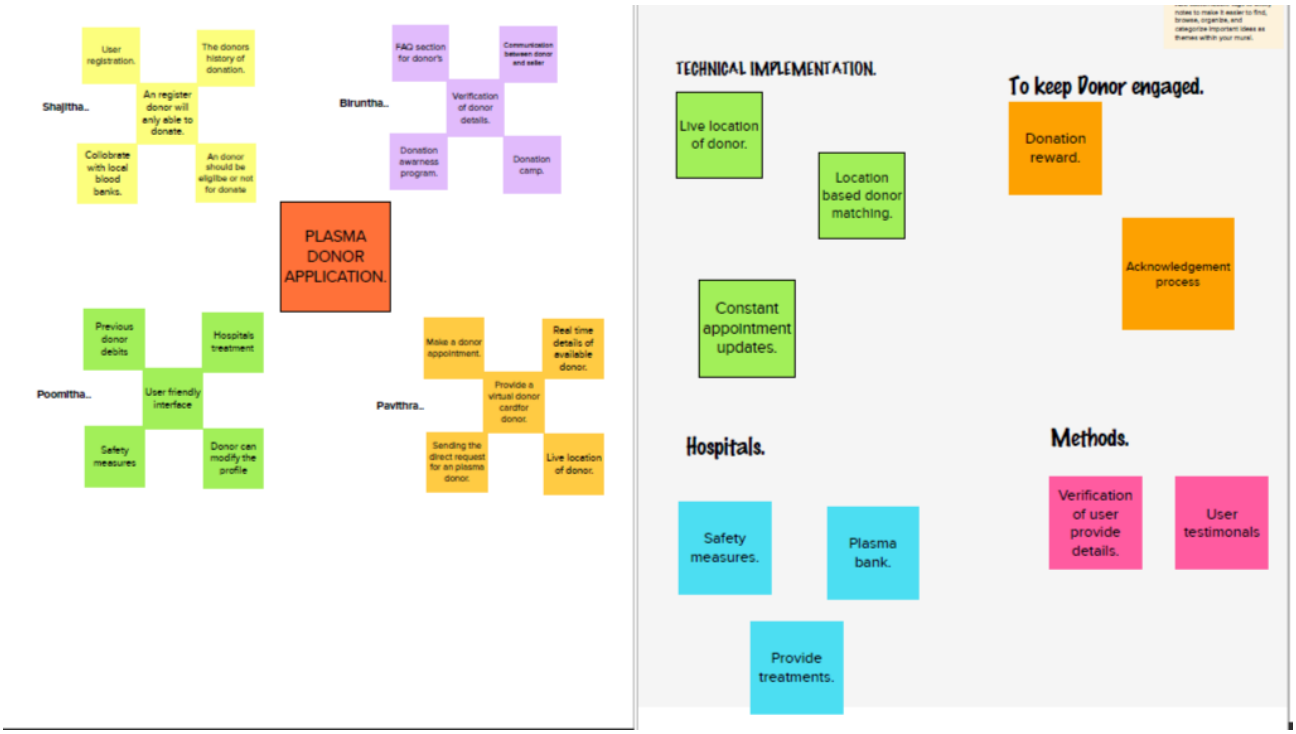
IDEATION AND BRAINSTORMING :

My project name is **Plasma donor application**, let us see the brainstorm and ideaprioritization Brainstorming provides a free and open environment that encourages everyone withina team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcomeand built upon, and all participants areencouraged to collaborate, helpingeach other developa rich amount of creativesolutions.

Step-1: Team Gathering, Collaboration and Selectthe Problem Statement:



Step-2: Brainstorm, Idea Listing and Grouping:



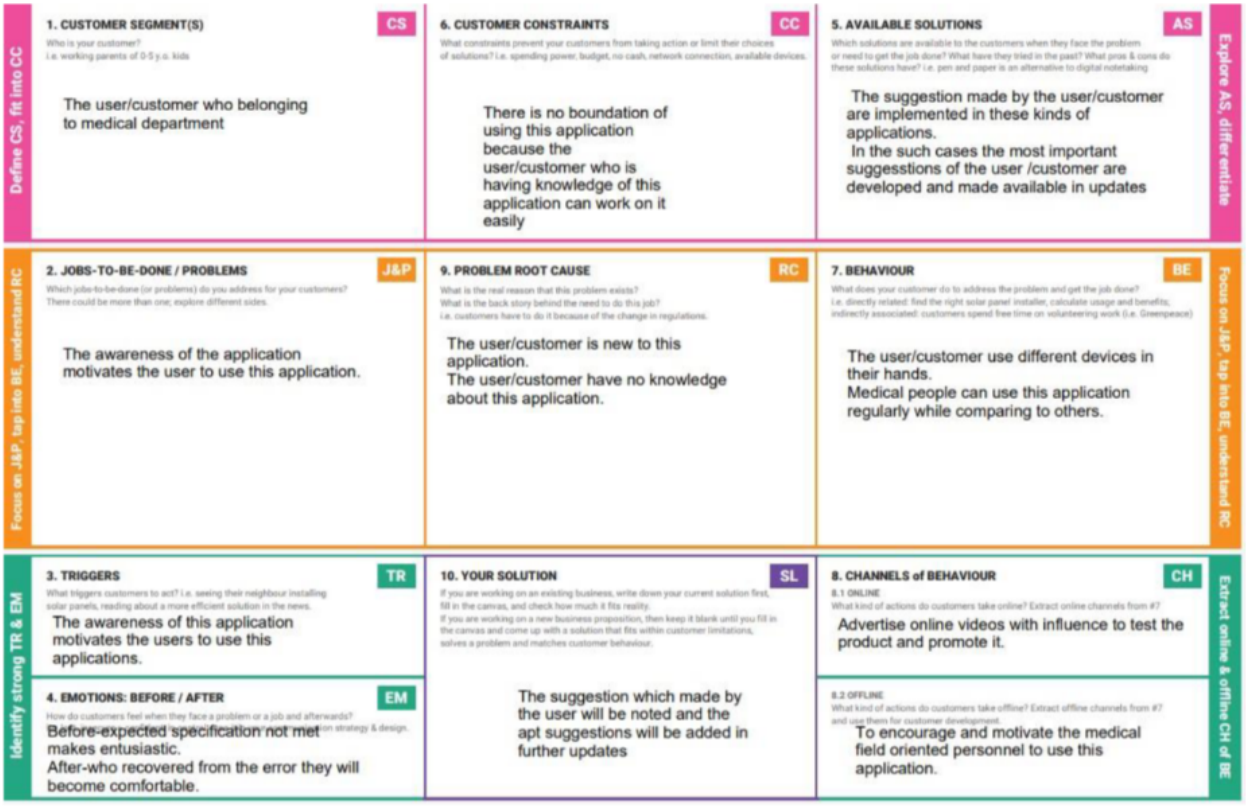
Step-3: Idea Prioritization:

PROPOSED SOLUTION:

S.NO.	PARAMETER	DESCRIPTION
1.	Problem Statement (Problem to be solved)	Data on the availability of plasma in hospitals, blood banks, and recipient blood group information are not readily available.
2.	Idea / Solution description	IDEA: We can easily access from anywhere at anytime through our web application.
3.	Novelty / Uniqueness	NOVELTY: The system proposed here aims at connecting the donors & through the patients in online application.
4.	Social Impact / Customer Satisfaction	SOCIAL IMPACT: We can be store the data in long days . They can face any difficulties
5.	Business model(Revenue Model)	During covid situation they need for plasma is increasing day by day hence increasing revenue.

6.	Scalability of the Solution	Through the IBM cloud , we can store the database in IBM database.

PROBLEM SOLUTION FIT:



CHAPTER 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	Donor Registration	Registration through Form Registration through Gmail
FR-2	Donor Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Recipient Registration	Register with form Register with Email
FR-4	Recipient Confirmation	Confirm via Email Confirm via OTP
FR-5	User Login	Login via Email Login via OTP.
FR-6	Recipient Notifies	Recipient get notified from Donor via messages.

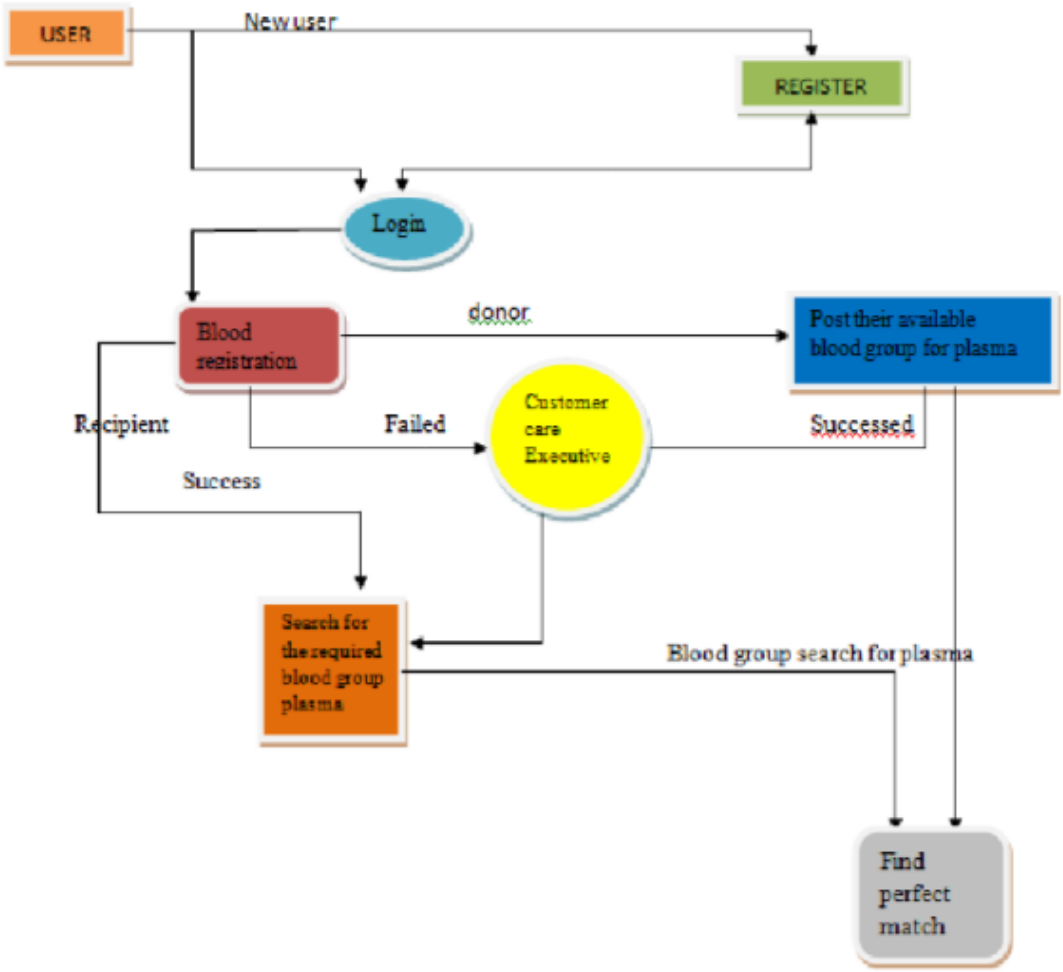
Non-functional Requirements:

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

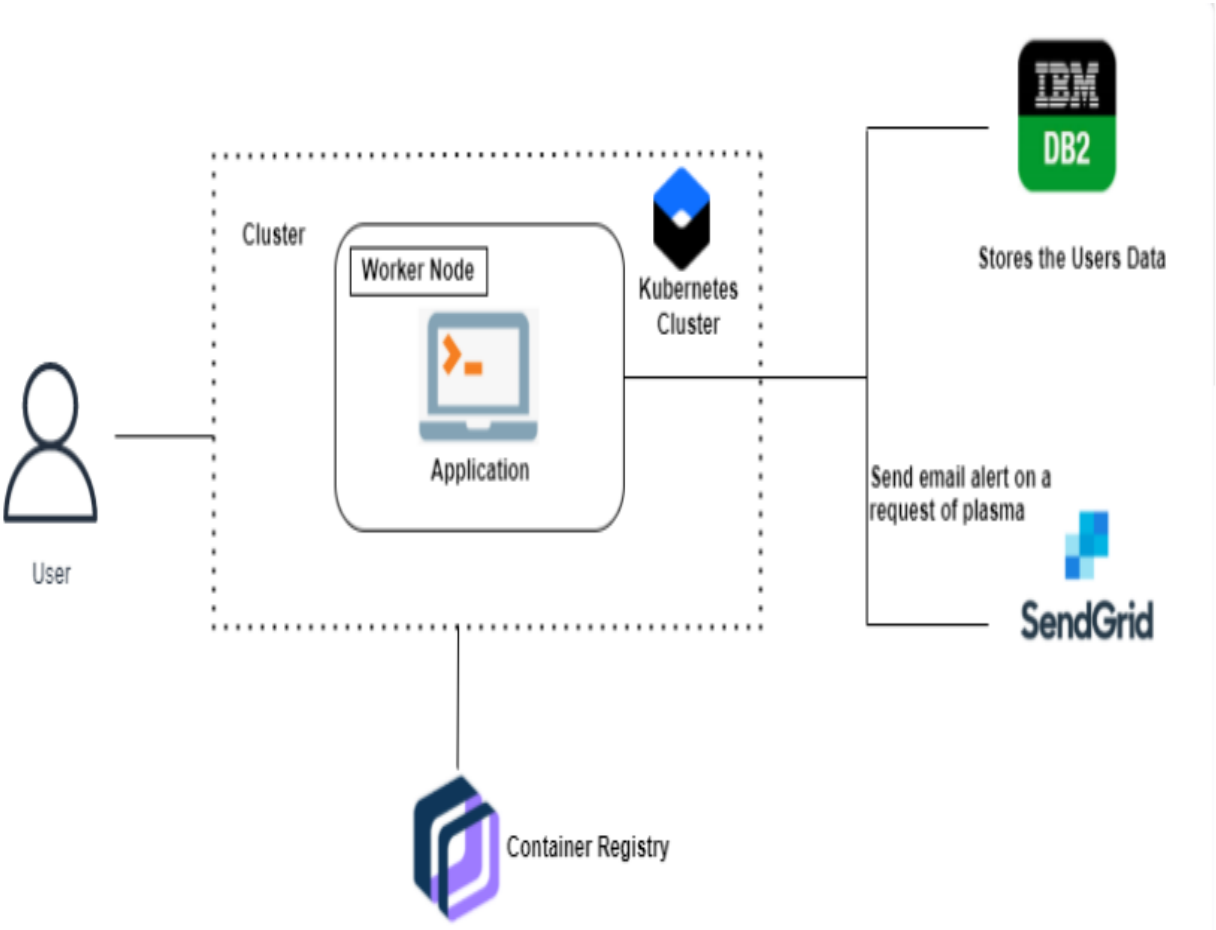
FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Creating an online platform that not just serves strong network between plasma donors and plasma recipients and an User with no understanding of application must be able to interact with chatbot.
NFR-2	Security	The admin will handle the information given by the user and store them in a secured database which cannot be accessed by any other people.
NFR-3	Reliability	The database update process must roll back all related updates when any update fails.
NFR-4	Performance	This application will help donors as well as recipients in a better manner.
NFR-5	Availability	The notification about the availability of donor was sent through SMS.
NFR-6	Scalability	More number of users will register.

CHAPTER 5
PROJECT DESIGN

DATA FLOW DIAGRAMS:


USER
Newuser
REGISTER
Login
Blood registration
donor
Post their available blood group for plasma
Recipient
Failed
Customer care Executive
Successed
Success
Search for the required blood group plasma
Blood group search for plasma
Find perfect match

SOLUTION & TECHNICAL ARCHITECTURE:



USER STORIES:

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	I can register the app with Gmail login.	Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password	I can register & access the dashboard with Gmail Login	High	Sprint-1
	Dashboard	USN-6	As a user, I can search the blood group for which I need plasma.	I can get perfectly-matched plasma through filters.	High	Sprint-2
Customer (Web user)	Dashboard	USN-7	As a user, I can see login page and registration page for which the user logins and searches for the required blood group plasma.	I can login through Gmail and Facebook and register for my required blood group plasma.	Medium	Sprint-2
Customer Care Executive	Dashboard	USN-8	As a customer care executive, I can solve the queries of the users.	I can reply to their queries and solve their related problems.	High	Sprint-3
Administrator	Registration	USN-9	As an Administrator, I can view the database of the registered users.	I can see who are the persons registered here and their mail ids.	Medium	Sprint-4
	Dashboard	USN-10	As an Administrator, I can view how many members need what kind of blood group for plasma.	I can count the number of requirements.	Low	Sprint-4
ChatBot	Dashboard	USN-11	In addition to the customer care executive, I can solve all the queries of the donor as well as the recipient.	I can reply to all the questions that are related to our app.	Medium	Sprint-4

CHAPTER 6
PROJECT PLANNING & SCHEDULING

SPRINT PLANNING & ESTIMATION :

Sprint	Functional Requirement	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint 1	REGISTRATION	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High	SHAJITA BEGAM
		USN-2	As a user, I will receive confirmation email once I have registeredfor the application	1	High	PAVITHRA
	LOGIN	USN-3	As a user, I can log into the application by entering email &password	1	High	BIRUNTHA DEVI
	DASHBOARD	USN-4	Logging in takes to the dashboard for the logged user.	`2	High	POOMITHA
Sprint 2	WORK SPACE	USN-1	Workspace nutrition assistance application	2	High	PAVITHRA
	CONNECTING T0 IBM DB2	USN-2	Linking database with application	2	High	SHAJITHA BEGAM
Sprint 3		USN-1	Wrapping up the server side works of frontend	1	Medium	BIRUNTHA
	WATSON ASSISTANT	USN-2	Creating Chatbot for nutritional facts query and basic problems should be solved	1	Medium	SHAJITHA BEGAM
	SENDGRID	USN-3	Using SendGrid to send mail to the user about how many calories can eat in every day	1	Medium	SHAJITHA BEGAM
Sprint 4	DOCKER	US N-1	Creating image of website using docker	2	High	SHAJITHA BEGAM
	CLOUD REGISTRY	US N-2	Uploading Docker image to IBM Cloud registry	2	High	BIRUNTHA
	KUBERNETES	US N-3	Create container using the Docker image and hosting the site	2	High	PAVITHRA
	EXPOSING	US N-4	Exposing IP/Ports for the site	2	High	SHAJITA BEGAM

SPRINT DELIVERY & SCHEDULE

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	03 Oct 2022	08 Oct 2022	20	10 Oct 2022
Sprint-2	20	6 Days	16 Oct 2022	22 Oct 2022	20	30 Oct 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	20	13 Nov 2022
Sprint-4	20	6 Days	13 Nov 2022	18 Nov 2022	20	19 Nov 2022

REPORTS FROM JIRA:

MILESTONE	ACTIVITY
LOGIN PAGE	Creating a Login\ Registration page for thetracker application webpage
UI/UX	Creating a Login\ Registration page for thetracker application webpage
CONNECT TO IBM DB2	Creating a Login\ Registration page for thetracker application webpage
WATSON ASSISTANT	Creating a Login\ Registration page for thetracker application webpage
WEBSITE TESTING	Test multiple cases of backendand frontend for bugs.
SENDGRID	Setting up SendGrid tosend emails to users
DOCKER	Create a docker image andupload it to IBM Cloud Registry
KUBERNETES	Migrating docker image Deploying via IBM Kubernetes Exposing IP\ Ports accordingly
SUPPORT	Bug fixes Website maintenance Scaling replicas

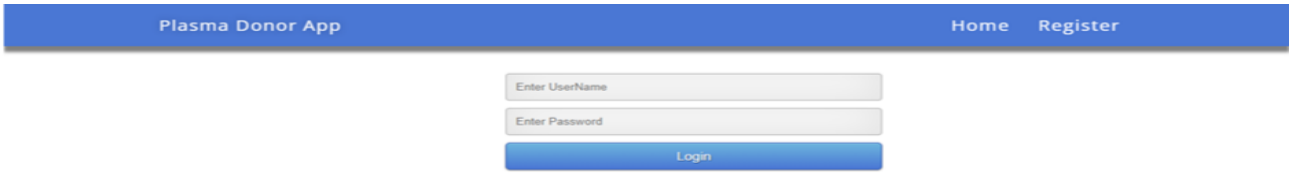
CHAPTER 7
CODING AND SOLUTIONING

FEATURE 1:
LOGIN:

```
<!DOCTYPE html>
<html >
<!--From https://codepen.io/frytyler/pen/EGdtg-->
<head>
  <meta charset="UTF-8">
  <title>Plasma Donor App</title>
    <link href='https://fonts.googleapis.com/css?family=Pacifico' rel='stylesheet' type='text/css'>
    <link href='https://fonts.googleapis.com/css?family=Arimo' rel='stylesheet' type='text/css'>
    <link href='https://fonts.googleapis.com/css?family=Hind:300' rel='stylesheet' type='text/css'>
    <link href='https://fonts.googleapis.com/css?family=Open+Sans+Condensed:300'
rel='stylesheet' type='text/css'>
    <link rel="stylesheet" href="{{ url_for('static', filename='style1.css') }}">
    <!link rel="stylesheet" href="style.css">

<style>
.login{
top: 20%;
}
.body{
    background-color:blueviolet;
}
</style>
</head>

<body>
<div class="header">
<div>Plasma Donor App</div>
    <ul>
    
    
    
        <li><a href="/registration">Register</a></li>
```

```
        <li><a class="active" href="/login">Home</a></li>
    </ul>
</div>
 <div class="login" >
        <div>
        </div>

    <!-- Main Input For Receiving Query to our ML -->
    <form action="{{ url_for('loginpage')}}"method="post">
        <input type="text" name="user" placeholder="Enter UserName" required="required"
style="color:black" />
        <input type="password" name="passw" placeholder="Enter Password" required="required"
style="color:black" />
        <button type="submit" class="btn btn-primary btn-block btn-large">Login</button>

    </form>
<br><br>
<div style="color:black">
 {{ pred }}</div>
 </div>

</body>
</html>
```

OUTPUT:



FEATURE 2:

REGISTER.html

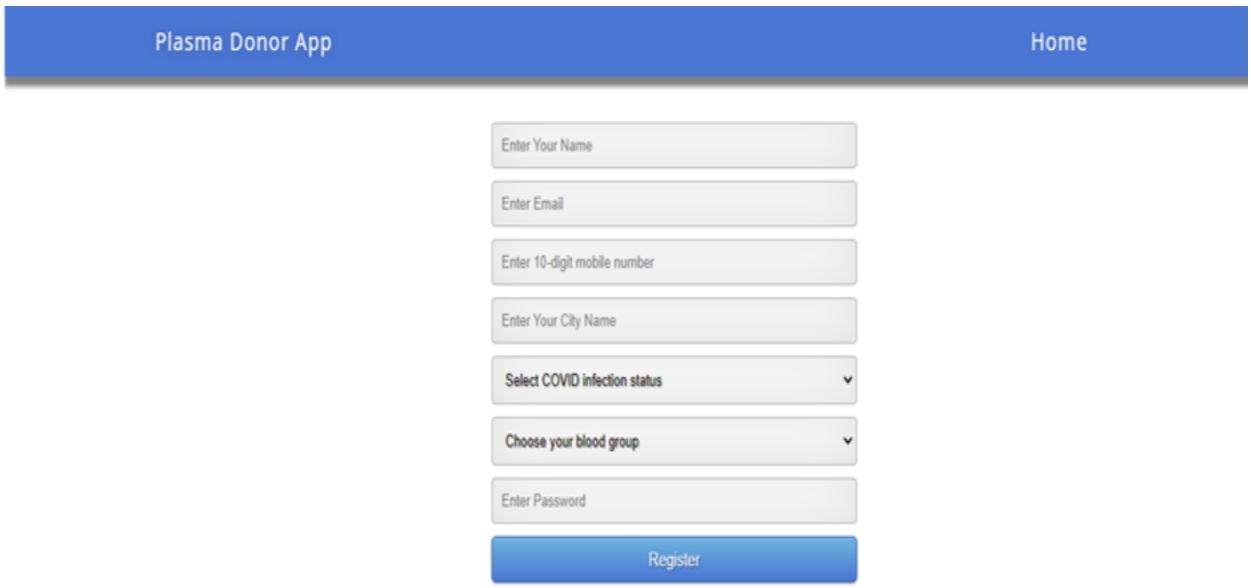
```
<!DOCTYPE html>
<html >
<!--From https://codepen.io/frytyler/pen/EGdtg-->
<head>1
  <meta charset="UTF-8">
  <title>Plasma Donor App</title>
    <link href='https://fonts.googleapis.com/css?family=Pacifico' rel='stylesheet' type='text/css'>
    <link href='https://fonts.googleapis.com/css?family=Arimo' rel='stylesheet' type='text/css'>
    <link href='https://fonts.googleapis.com/css?family=Hind:300' rel='stylesheet' type='text/css'>
    <link href='https://fonts.googleapis.com/css?family=Open+Sans+Condensed:300'
rel='stylesheet' type='text/css'>
    <link rel="stylesheet" href="{{ url_for('static', filename='style1.css') }}">
    <!link rel="stylesheet" href="style.css">

<style>
.login{
top: 20%;
}
</style>
</head>

<body>
<div class="header">
<div>Plasma Donor App</div>
    <ul>
```

1

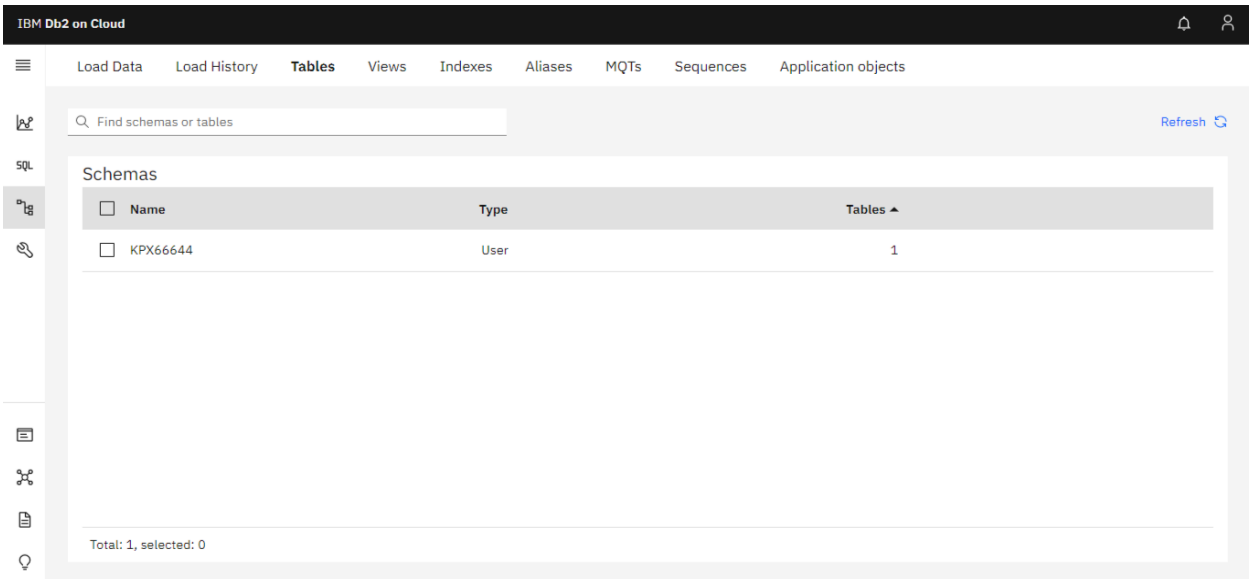
```
        <li><a class="active" href="/login">Home</a></li>
    </ul>
</div>
<div class="login">

    <!-- Main Input For Receiving Query to our ML -->
    <form action="{{ url_for('register')}}"method="post">
        <input type="text" name="name" placeholder="Enter Your Name" required="required"
style="color:black"/>
        <input type="email" name="email" placeholder="Enter Email" required="required"
style="color:black"/>
        <input type="text" name="phone" placeholder="Enter 10-digit mobile number"
required="required" style="color:black"/>
        <input type="city" name="city" placeholder="Enter Your City Name" required="required"
style="color:black"/>
        <select name="infect">

                    <option value="select" selected>Select COVID infection status</option>
                    <option value="infected">Infected</option>
                    <option value="uninfected">Uninfected</option>
        </select>
        <select name="blood">
                    <option value="select" selected>Choose your blood group</option>
                    <option value="O Positive">O Positive</option>
                    <option value="A Positive">A Positive</option>
                    <option value="B Positive">B Positive</option>
                    <option value="AB Positive">AB Positive</option>
                    <option value="O Negative">O Negative</option>
                    <option value="A Negative">A Negative</option>
                    <option value="B Negative">B Negative</option>
                    <option value="AB Negative">AB Negative</option>
        </select>
        <input type="password" name="passw" placeholder="Enter Password" required="required"
style="color:black"/>
        <button type="submit" class="btn btn-primary btn-block btn-large">Register</button>

    </form>
```

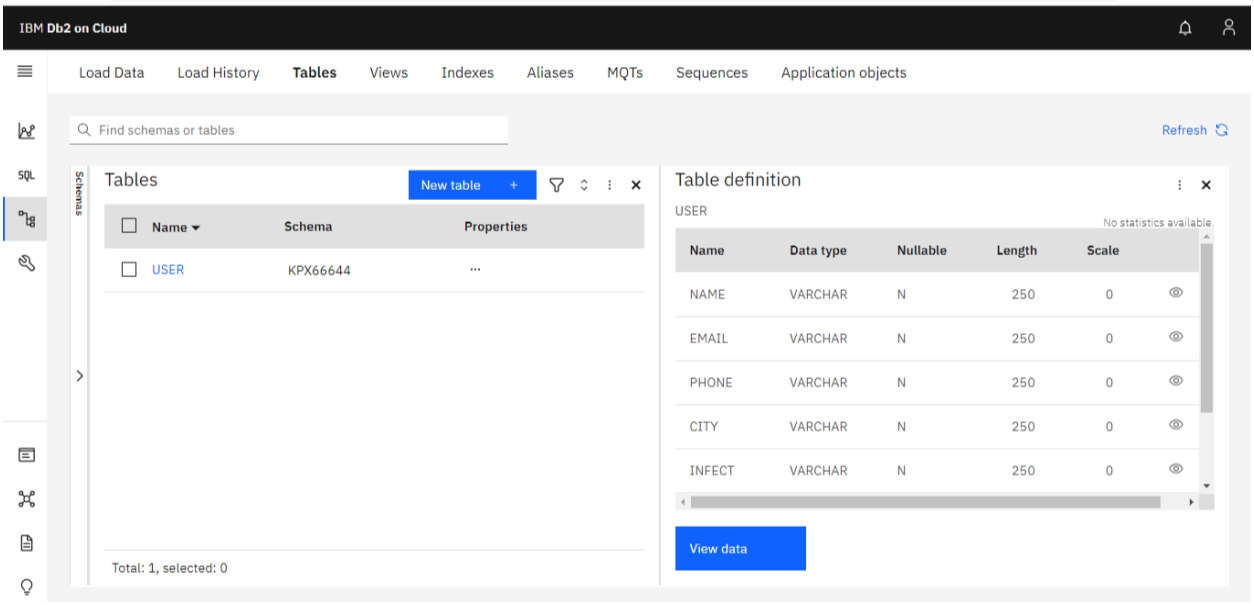
```
<br><br>
<div style="color:black">
{{ pred }}</div>
</div>

</body>
</html>
```

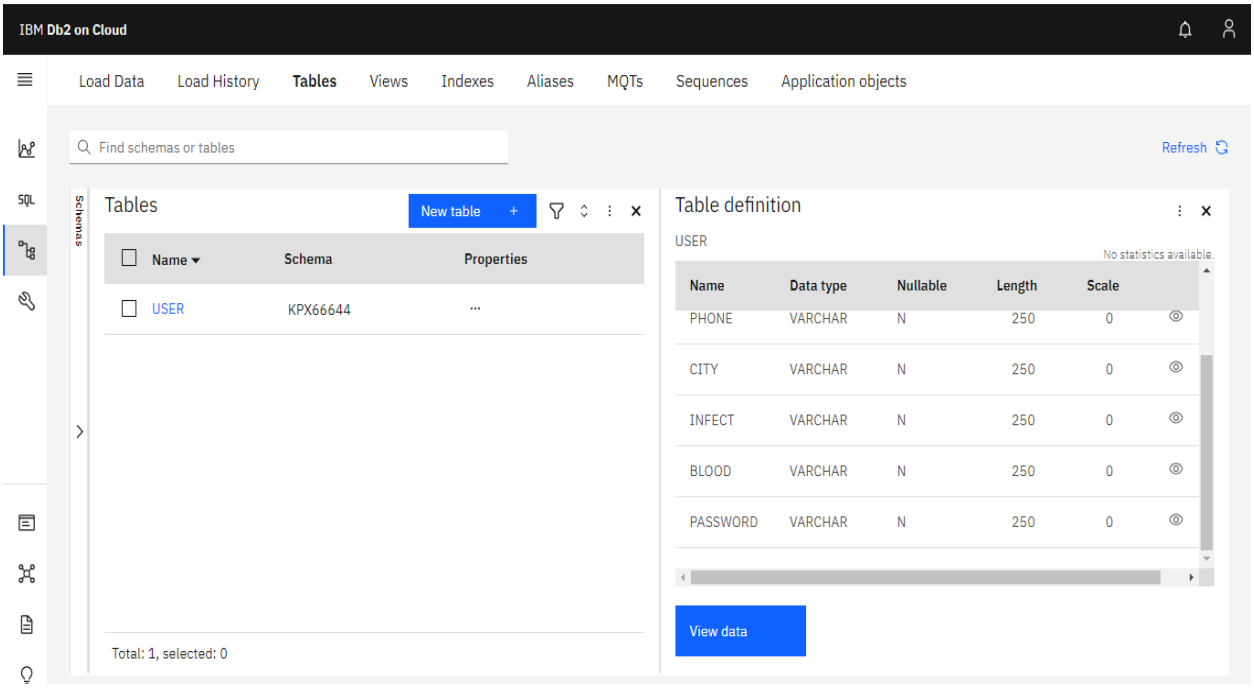
OUTPUT:



DATA BASE SCHEMA:






IBM Db2 on Cloud
Load Data
Load History
Tables
Views
Indexes
Aliases
MQTs
Sequences
Application objects
Find schemas or tables
Refresh
Schemas
Tables
New table
Name
Schema
Properties
USER
KPX66644
Total: 1, selected: 0
Table definition
USER
No statistics available.
Name
Data type
Nullable
Length
Scale
PHONE VARCHAR N 250 0
CITY VARCHAR N 250 0
INFECT VARCHAR N 250 0
BLOOD VARCHAR N 250 0
PASSWORD VARCHAR N 250 0
View data

CHAPTER 8
TESTING

TEST CASE:

Test cases are a set of actions performed on a system to determine if it satisfies software requirements and functions correctly as it claimed to perform.

USER ACCEPTANCE TESTING:

Purpose of Document :

The purpose of this document is to briefly explain the test coverage and open issues of the [PLASMA DONOR APPLICATION] project at the time of the release to User Acceptance Testing (UAT)

Defect Analysis :

This report shows the numberof resolved or closed bugs at each severity level, and how they were resolved.

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	10	4	2	8	15
Duplicate	1	0	3	0	4
External	2	3	0	1	6
Fixed	9	2	4	11	20
Not Reproduced	0	0	1	0	1
Skipped	0	0	1	1	2
Won't Fix	0	5	0	1	8
Totals	22	14	11	22	51

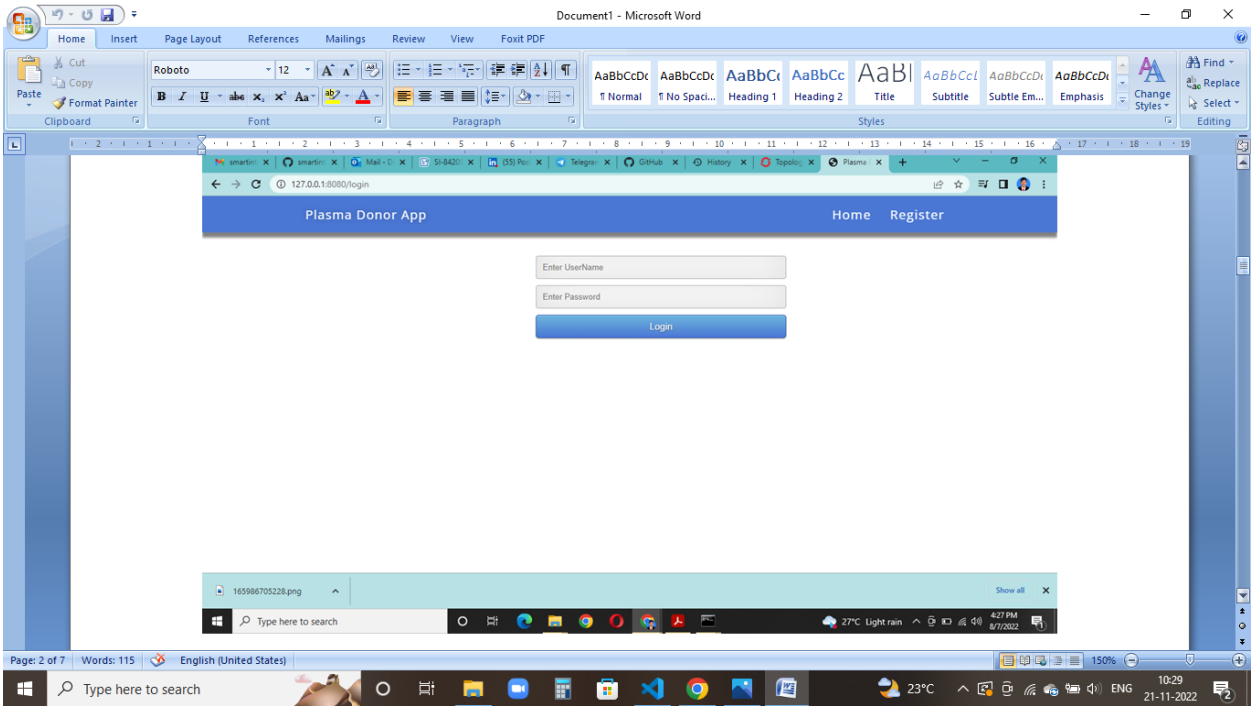
Test Case Analysis:

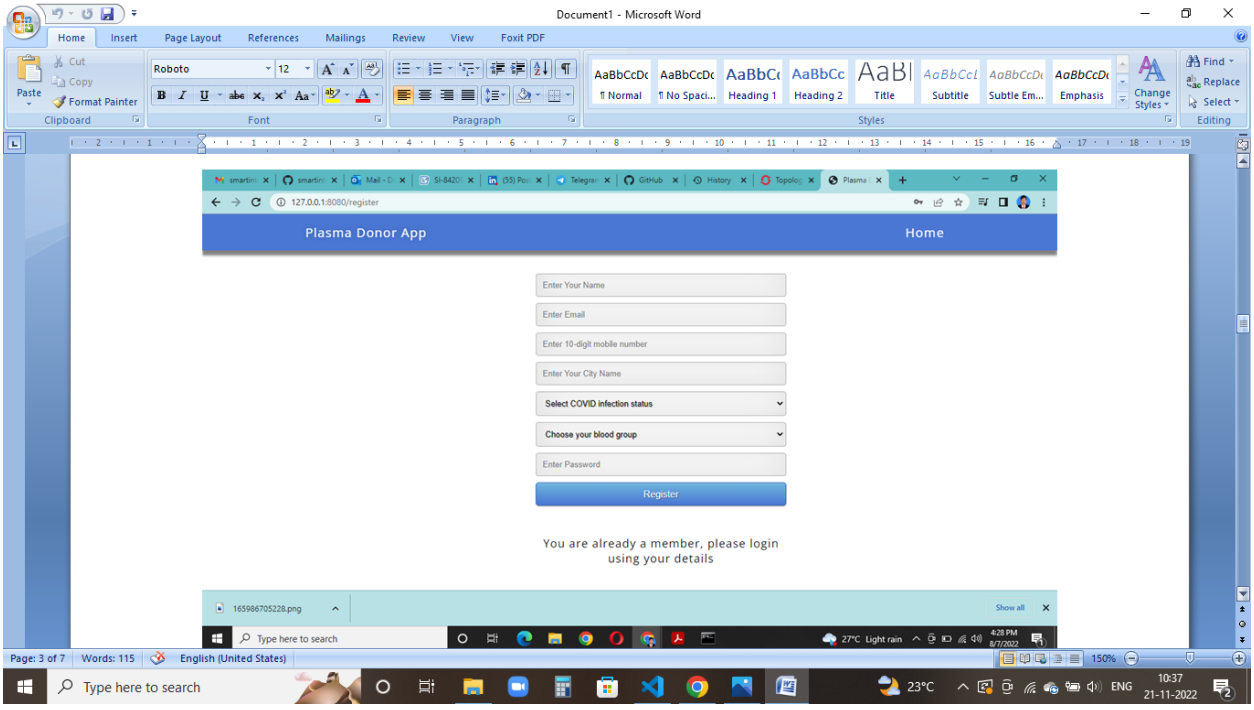
This report shows the numberof test cases that have passed,failed, and untested

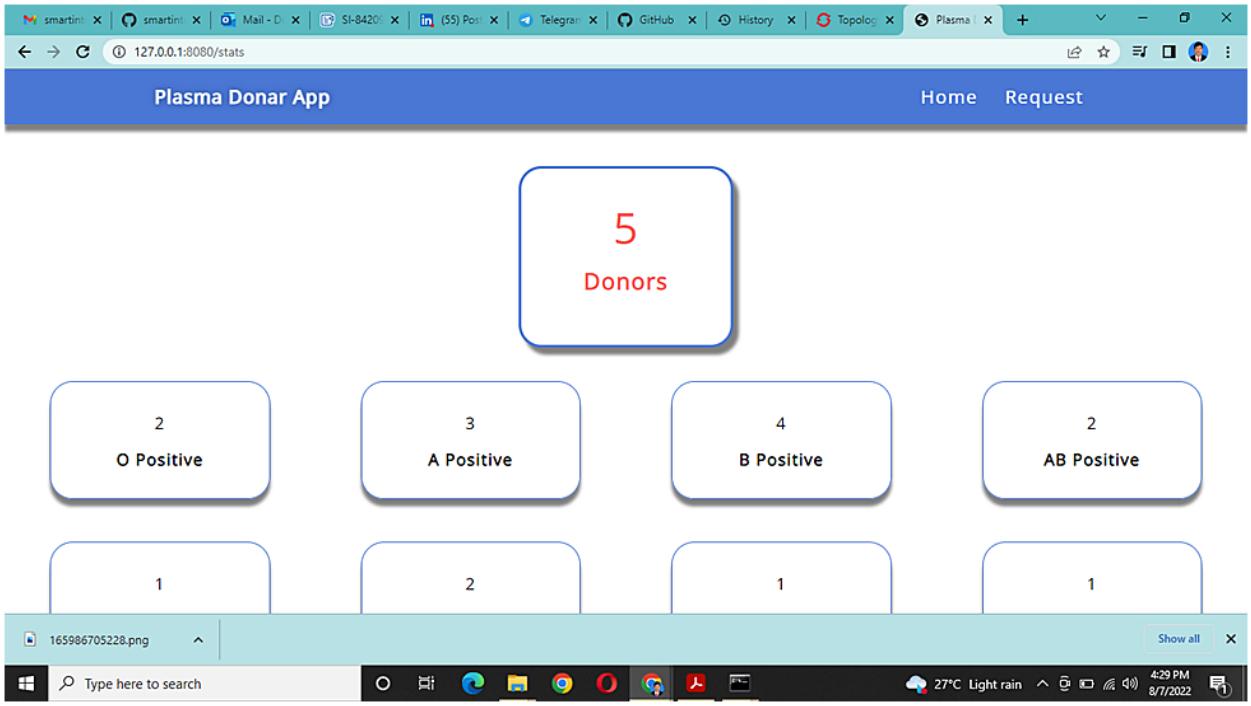
Section	Total Cases	Not Tested	Fail	Pass
Interface	7	0	0	7
Login	43	0	0	43
Logout	2	0	0	2

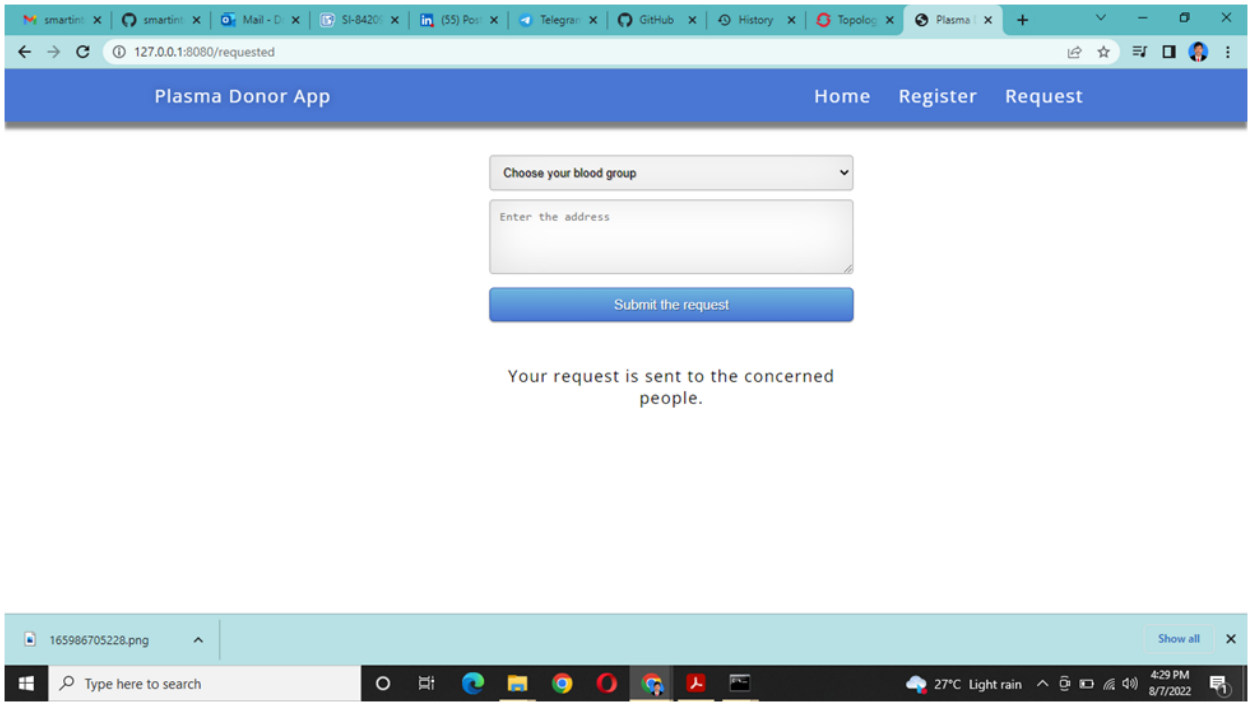
CHAPTER 9
RESULTS

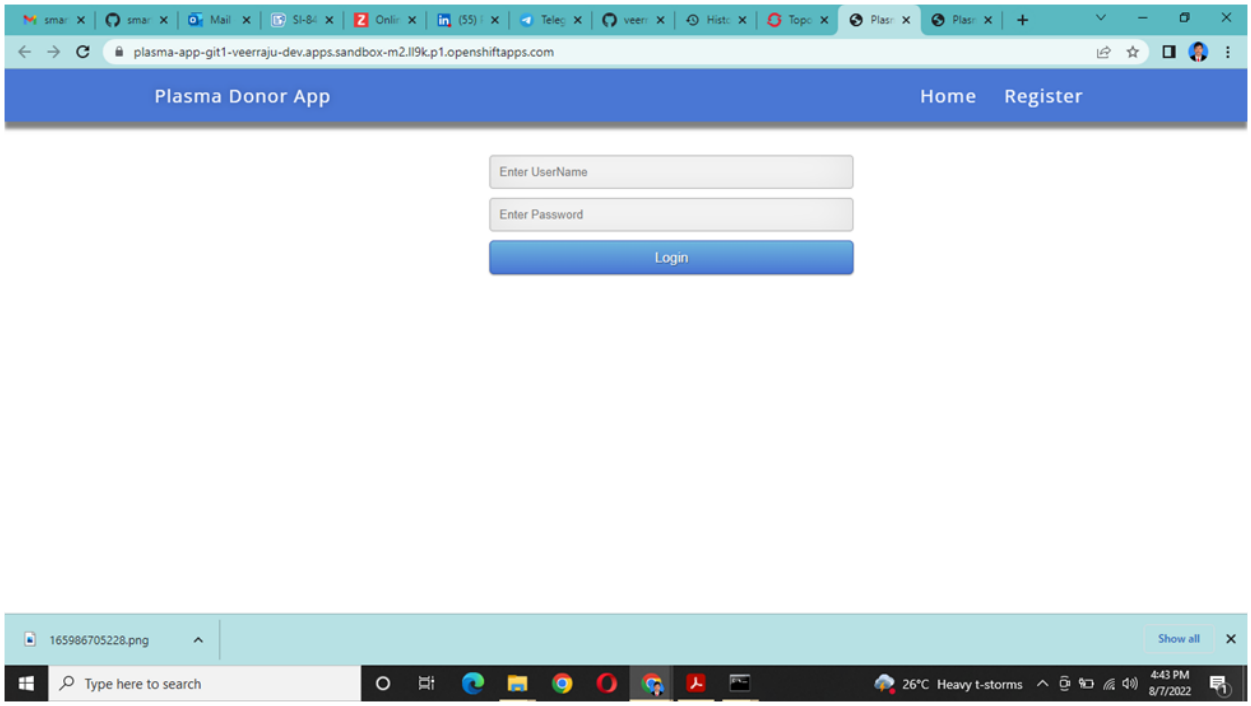
PERFORMANCE METRICS:



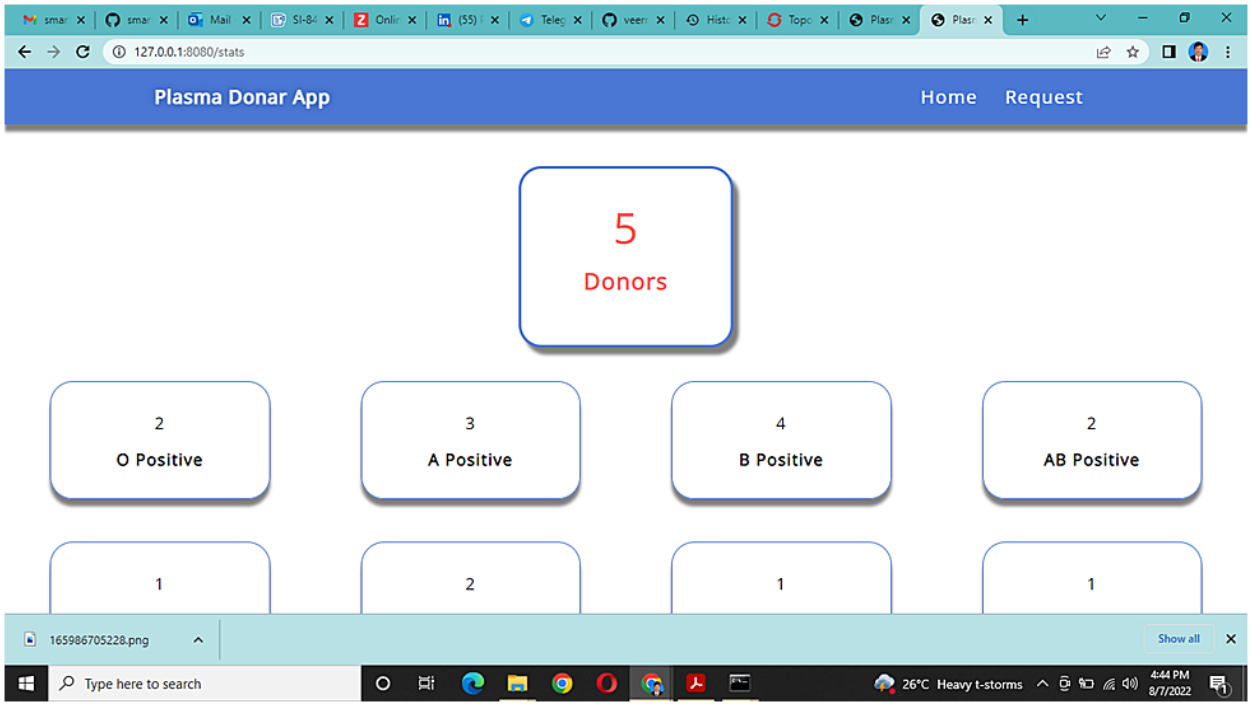



127.0.0.1:8080/stats
Plasma Donar App
Home
Request
5
Donors
2
O Positive
3
A Positive
4
B Positive
2
AB Positive
1
2
1
1
165986705228.png
Show all
Type here to search
27°C Light rain
4:29 PM
8/7/2022


127.0.0.1:8080/requested
Plasma Donor App
Home
Register
Request
Choose your blood group
Enter the address
Submit the request
Your request is sent to the concerned people.
165986705228.png
Show all
Type here to search
27°C Light rain
4:29 PM
8/7/2022


plasma-app-git1-veerraju-dev.apps.sandbox-m2.ll9k.p1.openshiftapps.com
Plasma Donor App
Home
Register
Enter UserName
Enter Password
Login

165986705228.png
Show all
Type here to search
26°C Heavy t-storms
4:43 PM
8/7/2022


127.0.0.1:8080/stats
Plasma Donar App
Home
Request
5
Donors
2
O Positive
3
A Positive
4
B Positive
2
AB Positive
1
2
1
1

165986705228.png
Show all
Type here to search
26°C Heavy t-storms
4:44 PM
8/7/2022

CHAPTER 10
ADVANTAGES & DISADVANTAGES

ADVANTAGES:

- Easy connecting donors and recipients makes blood donation way more proficient.
- Prime motive of the app is to solve the perpetual shortfall of blood donors.
- It connects blood donors and recipients through a single and scalable platform.
- Effortless access: Users on this platform will be able to use the app with just One-click.
- Easy registrations through the mobile app will help getting quick access from both ends.

DISADVANTAGES:

- weakness.
- dizziness.
- feeling faint.
- lightheadedness.
- nausea.
- bleeding from the needle prick.
- bleeding under the skin or bruising.

CHAPTER 11

CONCLUSION

Plasma is a liquid portion of blood; it is a mixture of water, proteins and salts. Antibodies are proteins made by the body in response to an infection. People fully rescued from COVID19 are encouraged to donate plasma, which can help to increase the lifespan of other patients becausetheir plasma contains antigens which helps the affected person to recover faster.

These immunoglobulin give your immune system a way to fight the virus when you are sick, so your plasma can be used to help others fight off illness. Individuals must fully resolve symptoms for at least 14 days prior are eligible to donate.

CHAPTER 12
FUTURE SCOPE

The sole purpose of this project is to develop a computer system that will link all donors, control a blood transfusion service and create a database to hold data on stocks of blood in each area. Furthermore, people will be able to see which patients need blood supplies via the android application.

One important future scope is availability of location-based blood bank details and extraction of location-based donor's detail, which is very helpful to the acceptant people.

To be able to deposit donated blood into inventory when donations are made. To be able to create, update, delete, and retrieve request records from hospitals to manage hospital requests for blood. To be able to create, update, delete, and query hospital's records in order to manage hospital information.

CHAPTER 13
APPENDIX

SOURCE CODE

GITHUB & PROJECT DEMO LINK:

https://github.com/IBM-EPBL/IBM-Project-34348-1660234488

DEMO LINK

https://www.youtube.com/watch?v=9rRV6TTfxio&t=9s