PLASMA DONOR APPLICATION

Team ID	PNT2022TMID07290
Project Name	Plasma Donor Application
Team Members	1. Vishalini N 2. Raajesh G 3. Srikaran S 4. Ramya A

Table of Contents

1. INTRODUCTION

`

1.1 PROJECT OVERVIEW:

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 mortalityor help those affected by COVID19 by donating plasma from patients who haveecovered 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, they are eligible to donate their plasma. As we all know, the traditional methods of finding plasma, one has to find out for oneself by looking at hospital records and contacting donors have been recovered, sometimes may not be available at home and move to other places. In this type of scenario, the health of those who are sick becomes disastrous. Therefore, it is not considered a rapid process to find plasma.

1.2 PURPOSE:

During the COVID 19 crisis, the requirement of plasma became a high priority and the donor count has become low.

The Purpose of this Application is saving the donor information and helping the needy by notifying the current donors list, would be a helping hand. In regard to the problem faced, this application is to be built which would take the donor details, store them and inform them upon a request

2. LITERATURE SURVEY

2.1 EXISTING PROBLEM:

- Cannot Upload and Download the latest updates
- No use of Web Services and Remoting
- Risk of mismanagement and of data when the project is under development.
- Less Security.
- No proper coordination between different Applications and Users.
- Fewer Users – Friendly

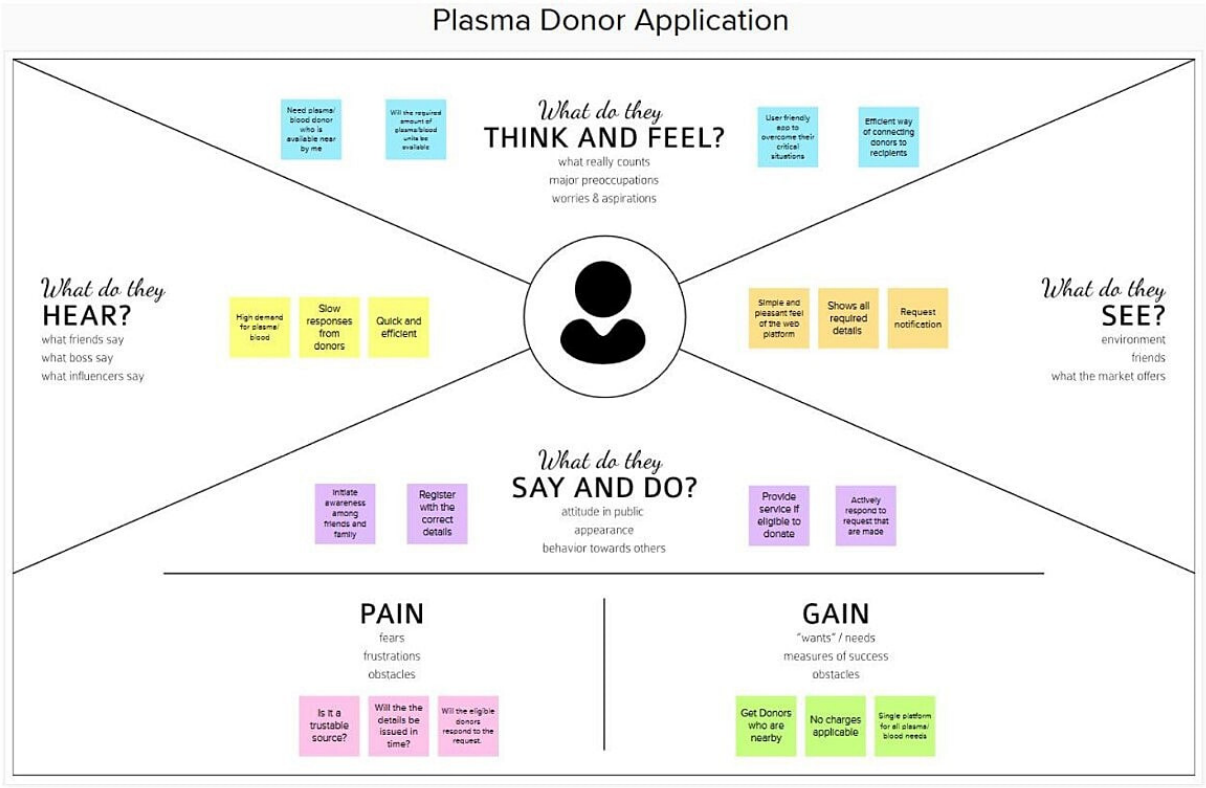
2.2 REFERENCE:

Denuis O'Neil (1999). "Blood component" Archived from the original on June 5, 2013. Normally, a certain amount of human body weight comes from blood. For adults, it is 4-6 liters of blood. This essential liquid plays an important role in transporting oxygen and nutrients to cells and removing carbon dioxide, ammonia and other waste products. Blood a very common tissue composed of over 4000 different types of components.

Ways to keep your plasma healthy, Original Archived November 1, 2013, Accessed November 11, 2011. Plasma donation is one of the most accepted practices for saving lives, while earning a few dollars. The whole process can take some time, but it's well worth it once you experience it a few times. Accepting money in exchange for plasma is welcome. It's a move when you feel like you're not just a hero, but you're adding value to yourself. The term "healthy" does not mean only in the absence of disease. It also means that you are healthy enough.

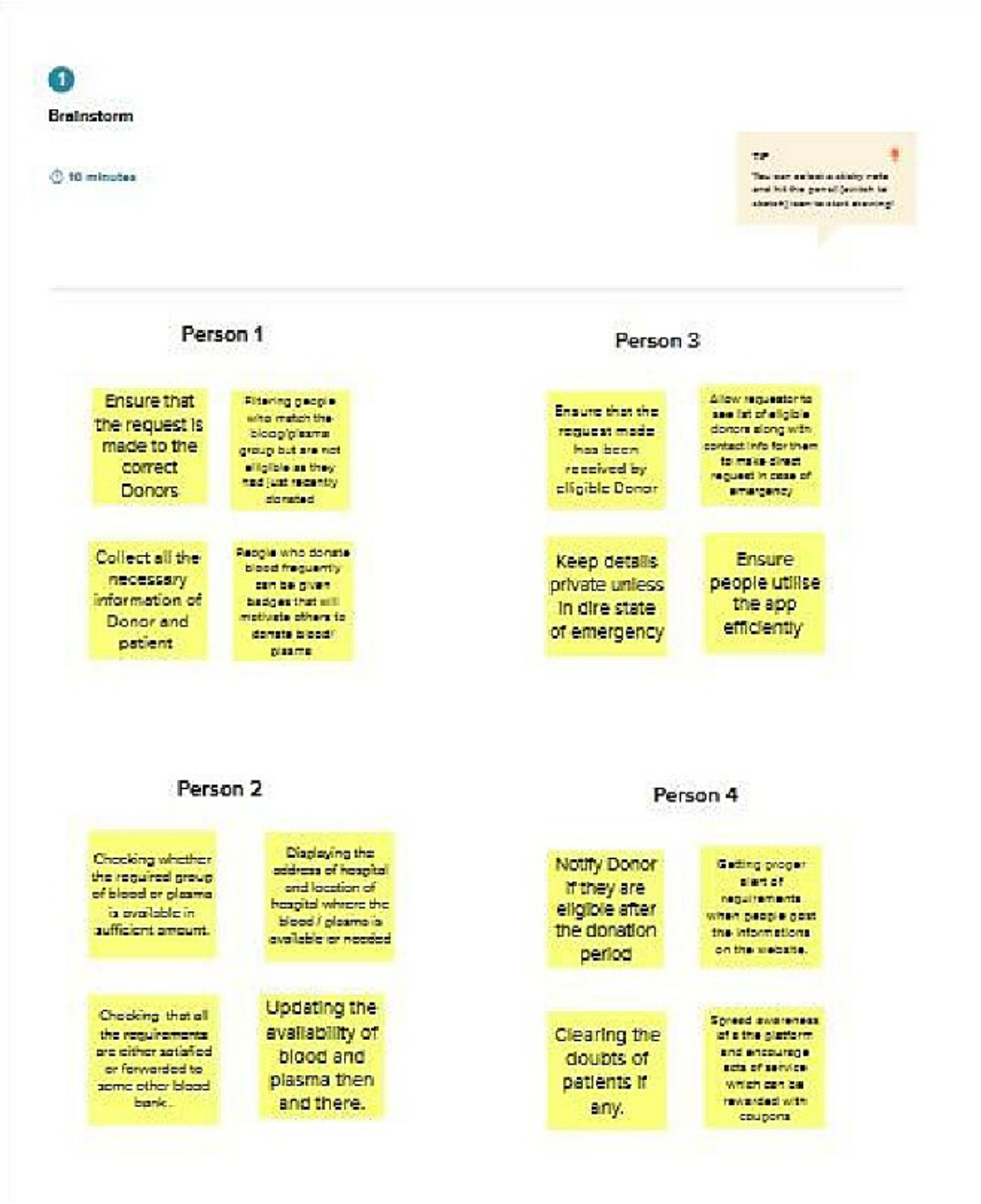
3. IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas:

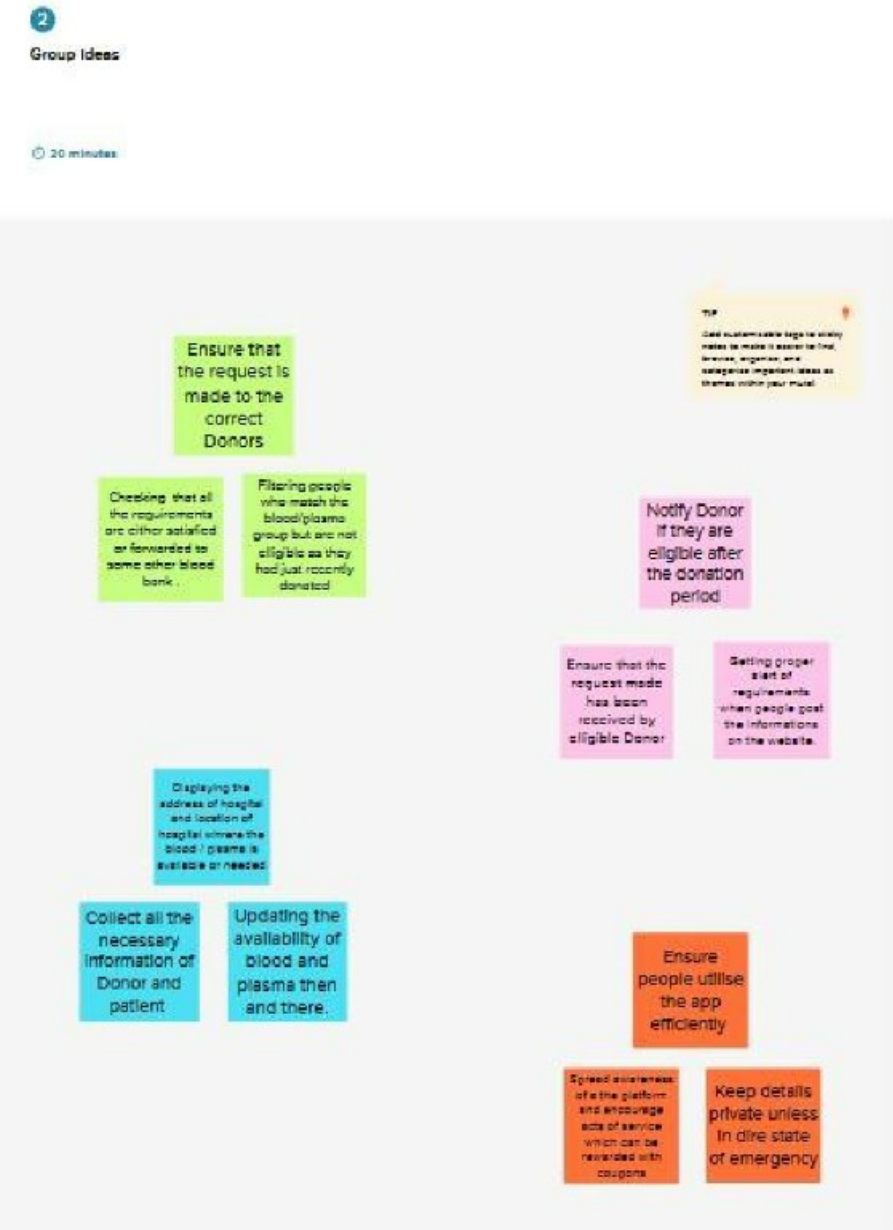


3.2 Ideation & Brainstorming:

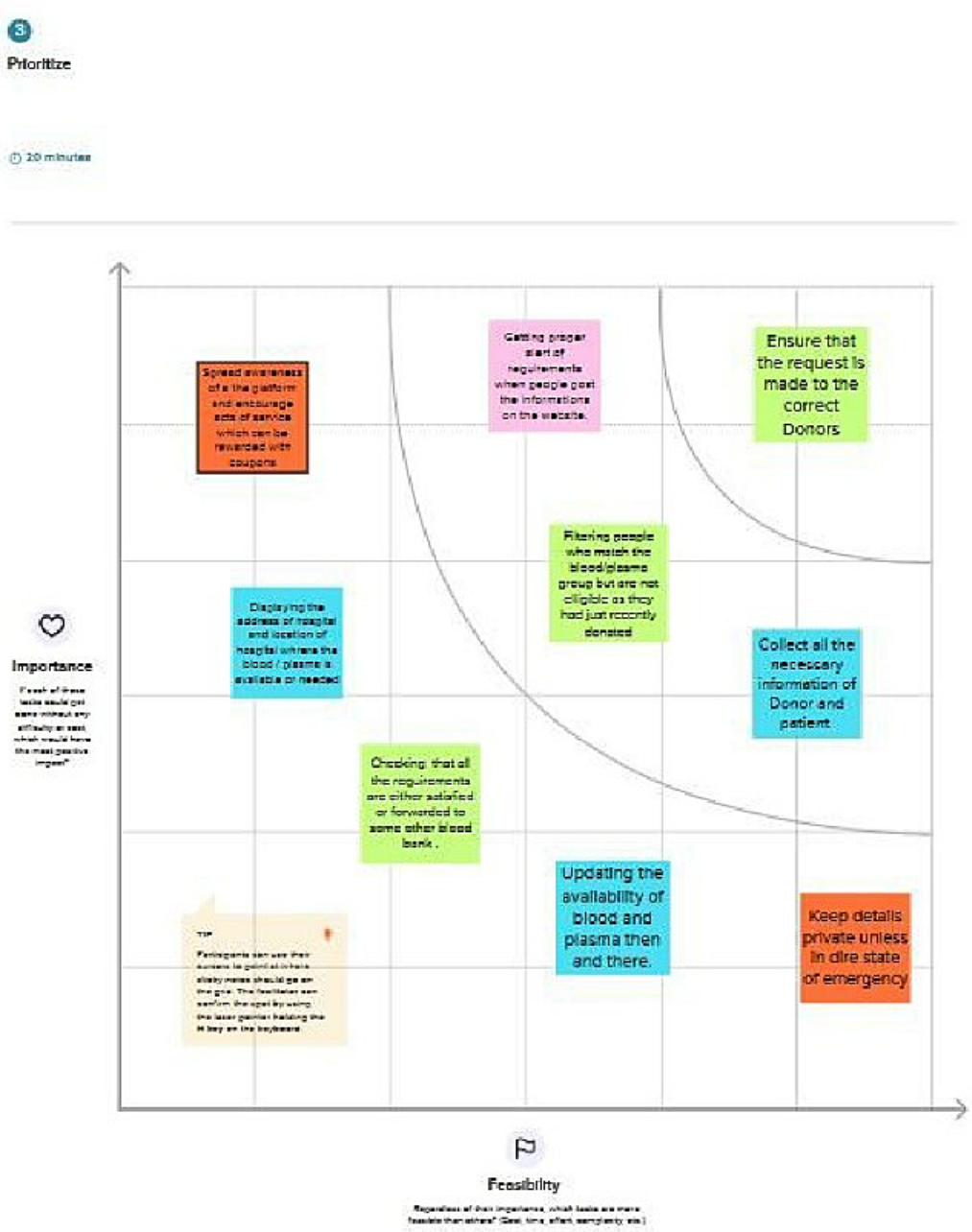
Step-1: Team Gathering, Collaboration and Select the Problem Statement



Step-2: Brainstorm, Idea Listing and Grouping



Step-3: Idea Prioritization



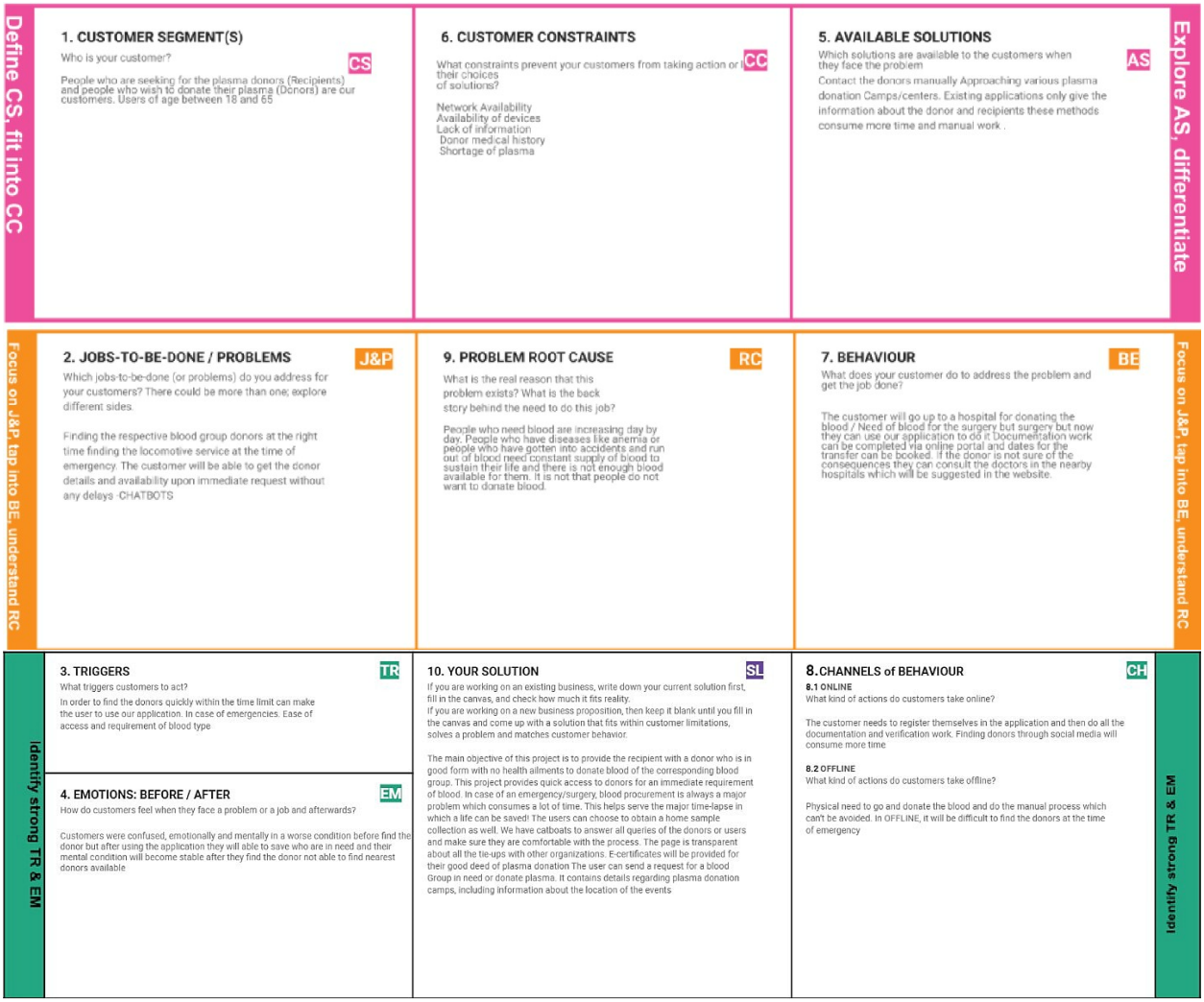
3.3 Proposed Solution Template:

Project team shall fill the following information in proposed solution template

S.No.	Parameter	Description
1.	ProblemStatement (Problem to be solved)	To help the plasma donor and seeker by developing a cloud-based application.
2.	Idea/Solution description	In day-to-day life requirement for plasma became high, especially during the COVID-19 crisis. But the donor count was low. Saving the donor information and helping the needy 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. Regarding the problem faced, an application is to be built which would take the donor details store them and inform them upon request. And also for plasma donation center, it is Easy to find donors.
3.	Novelty/ Uniqueness	We help the donor to access the location of a blood center which is nearby him/her. We Notify them by sending a confirmation emails after they get registered for the plasma donation and also we notify them once the appointment is fixed in the

		center. Further , more the GPS map option is available to direct The donor to the center.
4.	Social Impact / Customer Satisfaction	By using this application, the user will experience a user-friendly and responsive interface and they get satisfaction by Saving thousand so people's life.
5.	Business Model(Revenue Model)	Donating Plasma with the help of an application makes our idea realistic. The user's information is encrypted. We maintain this app by automation for saving admin and user time. Users get profited as we take care of them even after the plasma donation by giving them hospitality details. Also, we use the Chabot answer FAQs ,asset helps the user to get immediate Answer to their doubts.
6.	Scalability of the Solution	Whatever the requirements, the application provides a clear solution for the requirements. It can handle more users who use the application at the same time .

3.4 PROBLEM SOLUTION FIT:



4. REQUIREMENT ANALYSIS:

4.1 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 Form (WebApp)
FR-2	User Plasma Request	Users can request to donate plasma by filling out therequest form on the page. Once the request is submitted, they will get an email
FR-3	Searching/reporting requirements	Users can use the search bar to look up informationabout camps and other topics.
FR-4	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 anddetails of plasma donation.

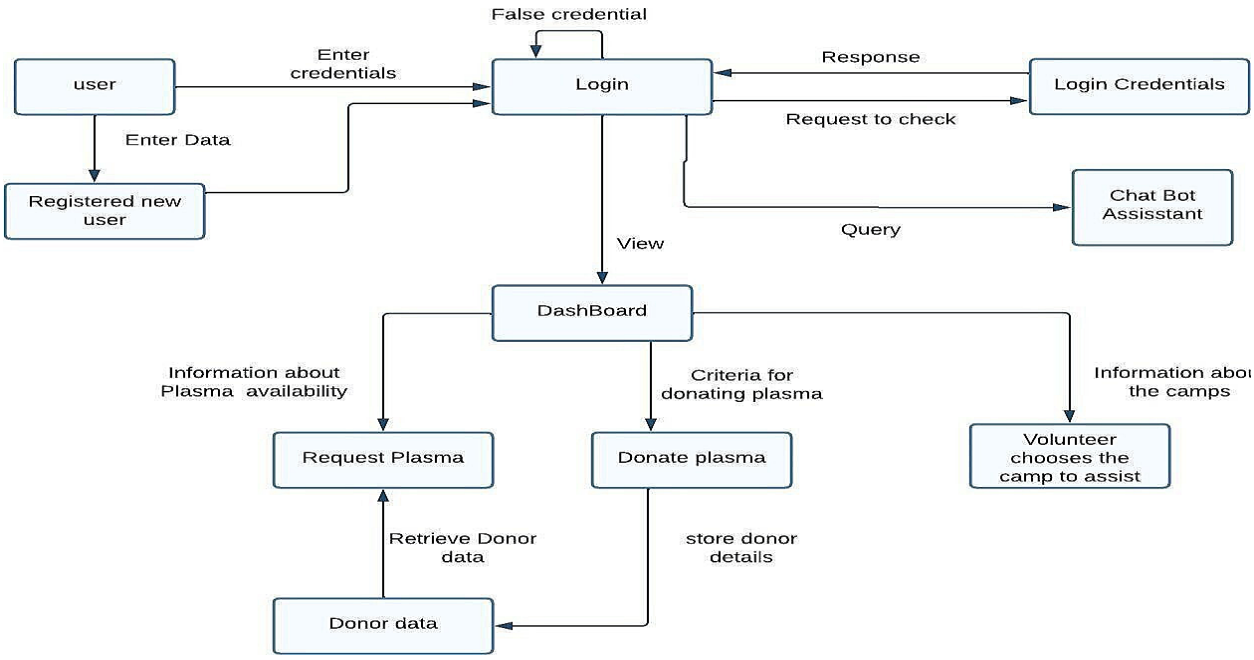
4.2 NON-FUNCTIONAL REQUIREMENTS:

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

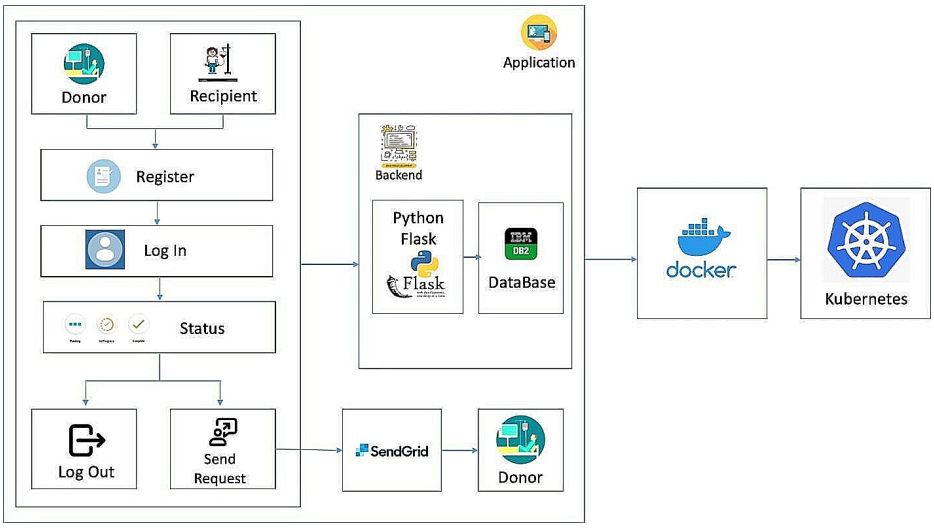
NFR No.	Non-Functional Requirement	Description
NFR-1	Usability	Must have a good-looking User-friendly interface.
NFR-2	Security	It must be secured with the proper username andpassword.
NFR-3	Reliability	The system should be made in such a way that it isreliable in its operations and for securing the sensitive details.

5. PROJECT DESIGN

5.1 Data Flow Diagram:



5.2 Solution & Technical Architecture:



5.3 User Stories:

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority
Customer	Registration	USN-1	As a user, I can register for the application by entering my email, password	I can access my account /dashboard	High
	Login	USN-2	As a user, I can log into the application by entering email & password	I can access into my User profile and view details in dashboard	High
	Dashboard	USN-3	As a user, I can send the proper requests To donate and obtain plasma.	I can receive appropriate notifications through email	High

PROJECT PLANNING & SCHEDULING

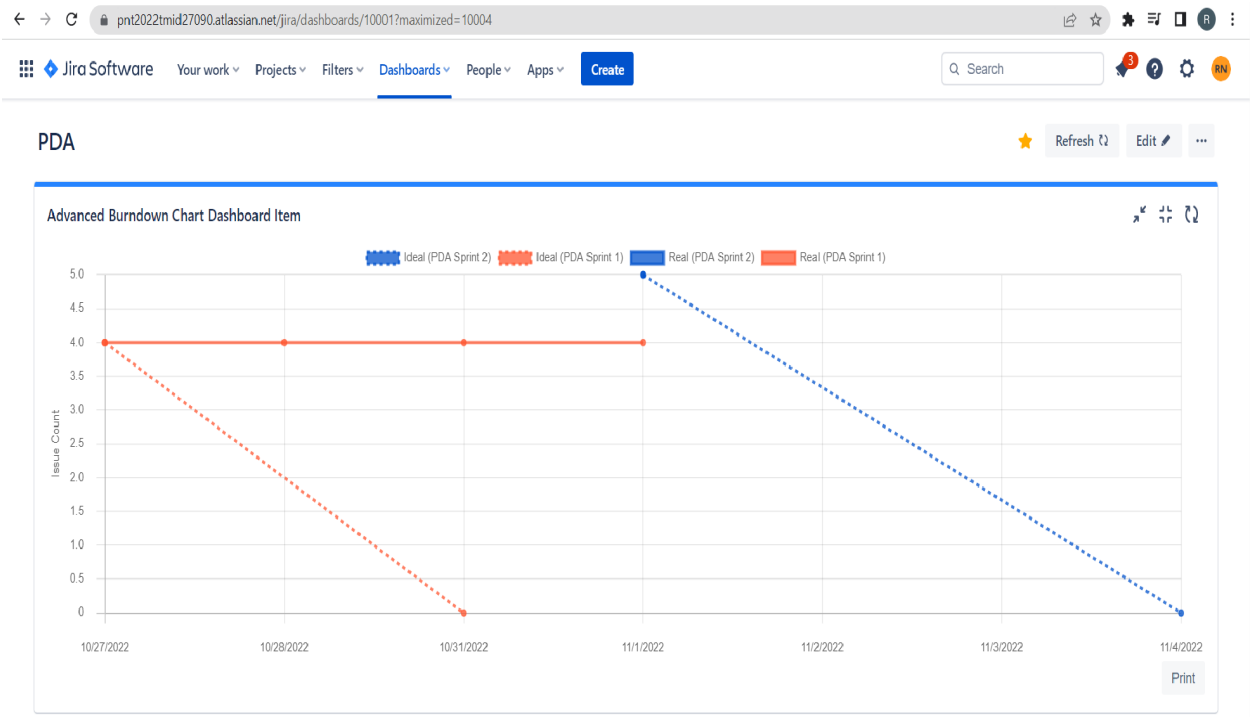
6.1Sprint Planning & Estimation:

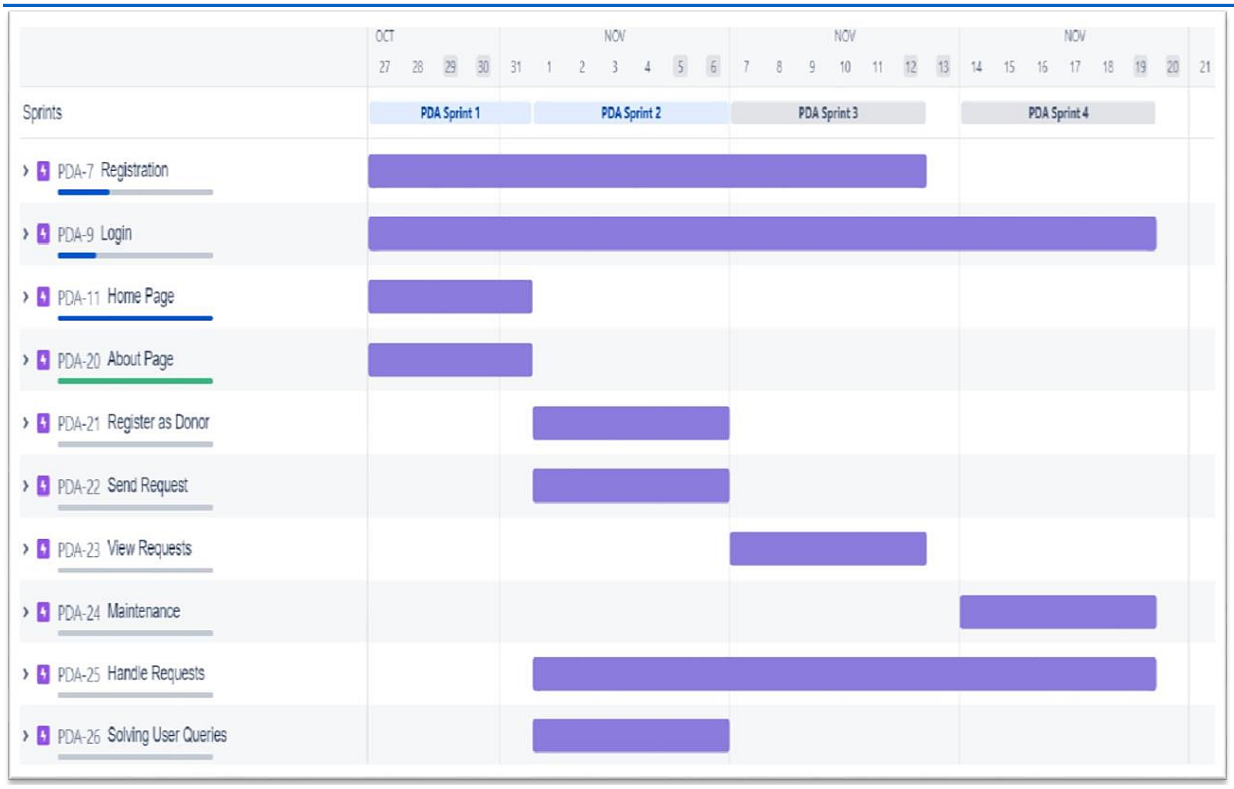
Sprint	Functional Requirement	User Story Number	Task	Points	Priority	Team members
Sprint - 1	UI	1	• Create user register and login function • UI to the pages	20	High	Ramya.A
Sprint - 2	Cloud and Database	**2**	• Connecting flask with DB • SendGrid mail service	20	High	Raajesh.G
Sprint - 3	Development phase	**3**	• Creating images with docker • Deploying image to CR • Deploying Kubernets.	20	High	Srikaran.S
Sprint - 4	Testing and Deployment	**4**	• Make sure the software is handy to use	20	High	Vishalini N

6.2 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	24 Oct 2022	29 Oct 2022	20	15 Nov 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	16 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	20	17 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	18 Nov 2022

6.3 Reports from JIRA:





7. CODING & SOLUTIONING

7.1 FEATURE 1:

Python:

It is a high-level, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation.

Python is dynamically-typed and garbage-collected. It supports multiple programming paradigms, Including structured (particularly procedural), object-oriented and functional programming.

It is often described as a "batteries included" language due to its comprehensive standard library.

Guido van Rossum began working on Python in the late 1980s as a successor to the ABC programming language and first released it in 1991 as Python 0.9.0.

Python 2.0 was released in 2000 and introduced new features such as list comprehensions, cycle-detecting garbage collection, reference counting, and Unicode support. Python 3.0, released in 2008, was a major revision that is not completely backward-compatible with earlier versions. Python 2 was discontinued with version 2.7.18 in 2020.

Python consistently ranks as one of the most popular programming languages.

7.2 FEATURE 2:

Flask

Flask is a micro web framework written in Python. It is
Classified as a micro framework because it does not require particular tools or libraries.

It has no database abstraction layer, form validation, or any other components where pre-existing third-party libraries provide common functions.

However, Flask supports extensions that can add application features as if they were implemented in Flask itself. Extensions exist

For object-relational mappers, form validation, upload handling, various open authentication technologies and several common framework related tools.

7.3 Database Schema

IBM Db2 -

A hybrid ANSI-compliant data virtualization tool for accessing, querying and summarizing data across the enterprise which:

- Provides a massively parallel processing (MPP) architecture Exploits Hive, HBase and Apache Spark concurrently for best-in-class analytic capabilities
- Requires only a single database connection or query to connect disparate sources such as HDFS, RDMS, NoSQL databases, object stores and Web HDFS
- Provides low latency support for ad-hoc and complex queries, high performance, and federation capabilities
- Understands dialects from other vendors and various products from Oracle, IBM® Db2® and IBM Netezza®

- Enables advanced row and column security

KUBERNATES

Kubernetes — also known as “k8s” or “kube” — is a container orchestration platform for scheduling and automating the deployment, management, and scaling of containerized applications.

Kubernetes was first developed by engineers at Google before being open sourced in 2014. It is a descendant of Borg, a container orchestration platform used internally at Google. Kubernetes is Greek.

For helmsman or pilot, hence the helm in the Kubernetes logo (link resides outside IBM).

Today, Kubernetes and the broader container ecosystem are maturing into a general-purpose computing platform and ecosystem that rivals — if not surpasses — virtual machines (VMs) as the basic building blocks of modern cloud infrastructure and applications.

This ecosystem enables organizations to deliver a high- productivity Platform-as-a-Service (PaaS) that addresses multiple infrastructure-related and operations-related tasks and issues.

Surrounding cloud-native development so that development teams can focus solely on coding and innovation.

8. TESTING

8.1 TEST CASE:

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product.

It provides a way to check the functional it your components, sub-assemblies, assemblies and/or a finished product It is the process of exercising software with the intent of ensuring that the Software system meets its requirements and user expectation and does not fail in an unacceptable manner.

There are various types of test. Each test type addresses a specific testing requirement.

8.2 ACCEPTANCE TESTING

Acceptance Testing
UAT Execution & Report Submission

1. 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).

2. Defect Analysis

This report shows the number of 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	3	20
Duplicate	1	0	3	0	4
External	2	3	0	1	6
Fixed	11	2	4	20	37
Not Reproduced	0	0	1	0	1
Skipped	0	0	1	1	2
Won't Fix	0	5	2	1	8
Totals	24	14	13	26	77

3. Test Case Analysis

This report shows the number of test cases that have passed, failed, and untested.

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	7	0	0	7
Client Application	51	0	0	51
Security	2	0	0	2
Outsource Shipping	3	0	0	3
Exception Reporting	9	0	0	9
Final Report Output	4	0	0	4
Version Control	2	0	0	2

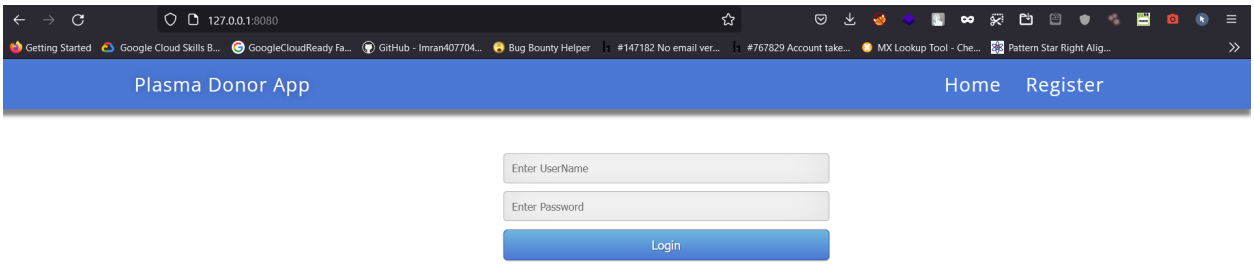
9. RESULTS

9.1 PERFORMANCE METRICS:

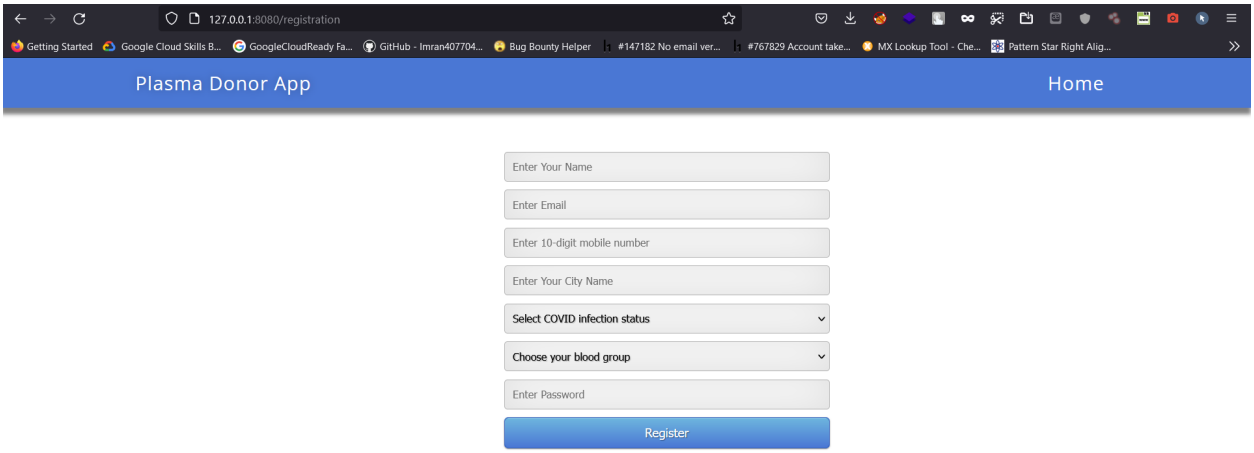
- Project metrics are used to track the progress and performance of a project.
- Monitoring parts of a project like productivity, scheduling, and scope make it easier for team leaders to see what's on track.
- As a project evolves, managers need access to changing deadlines or budgets to meet their client's expectations

OUTPUT SCREENS

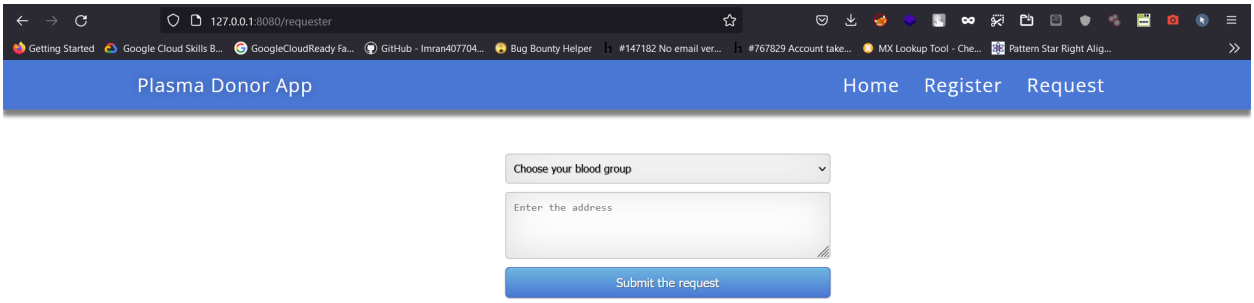
Login Page



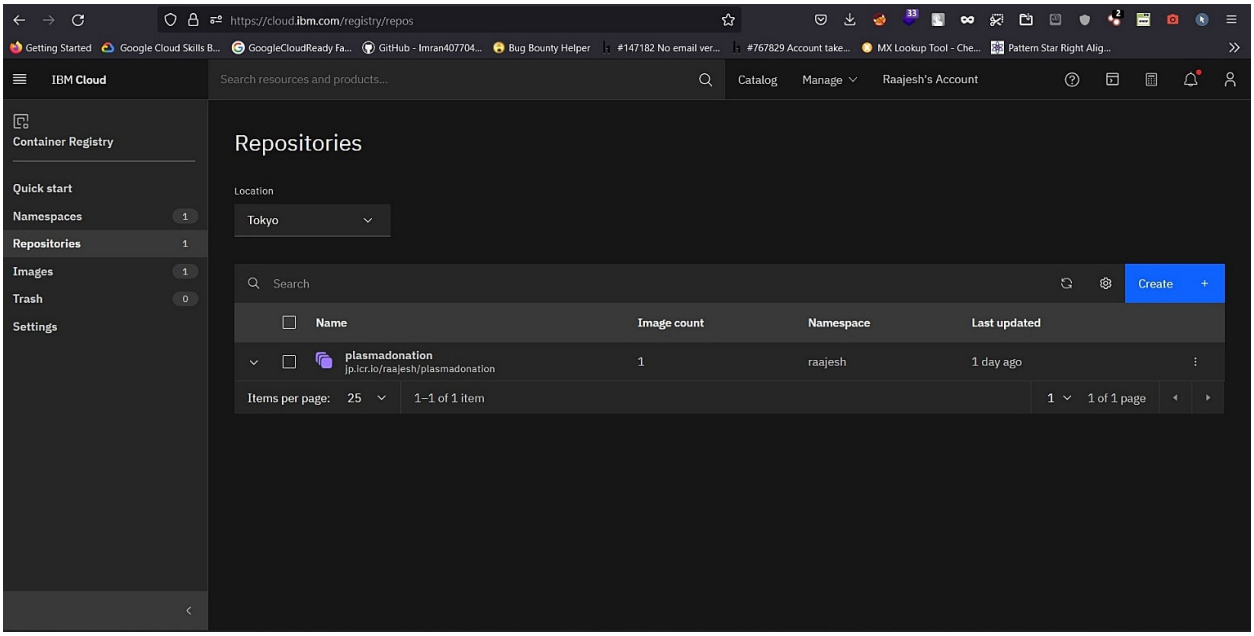
Register Page:



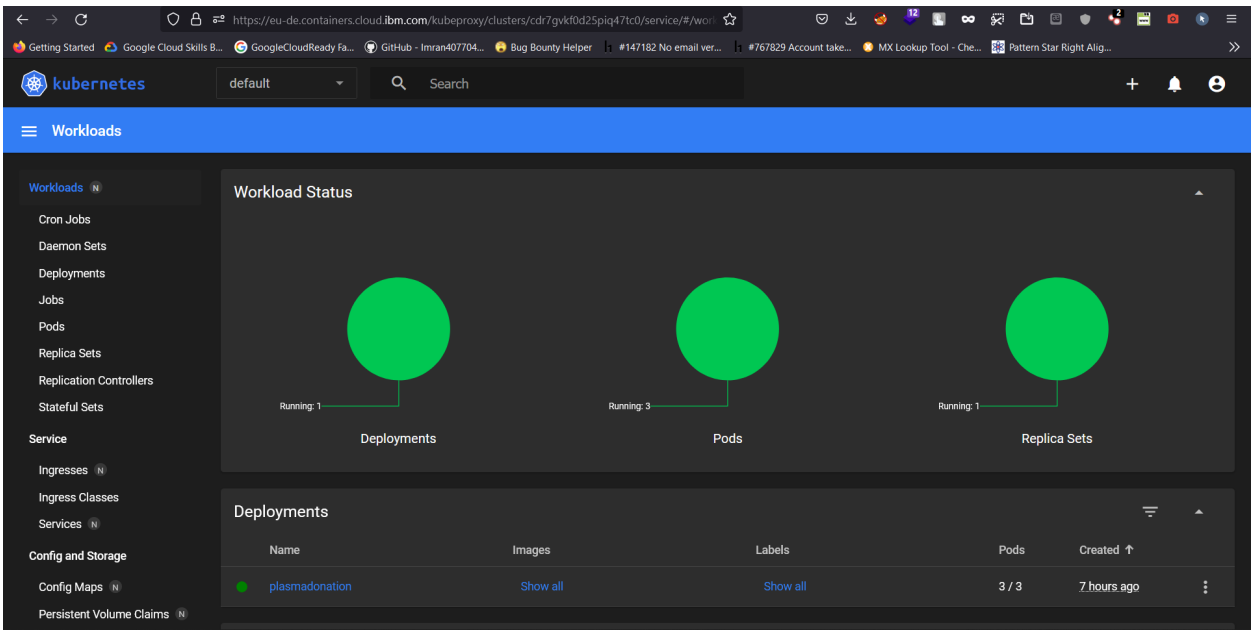
Request Page:



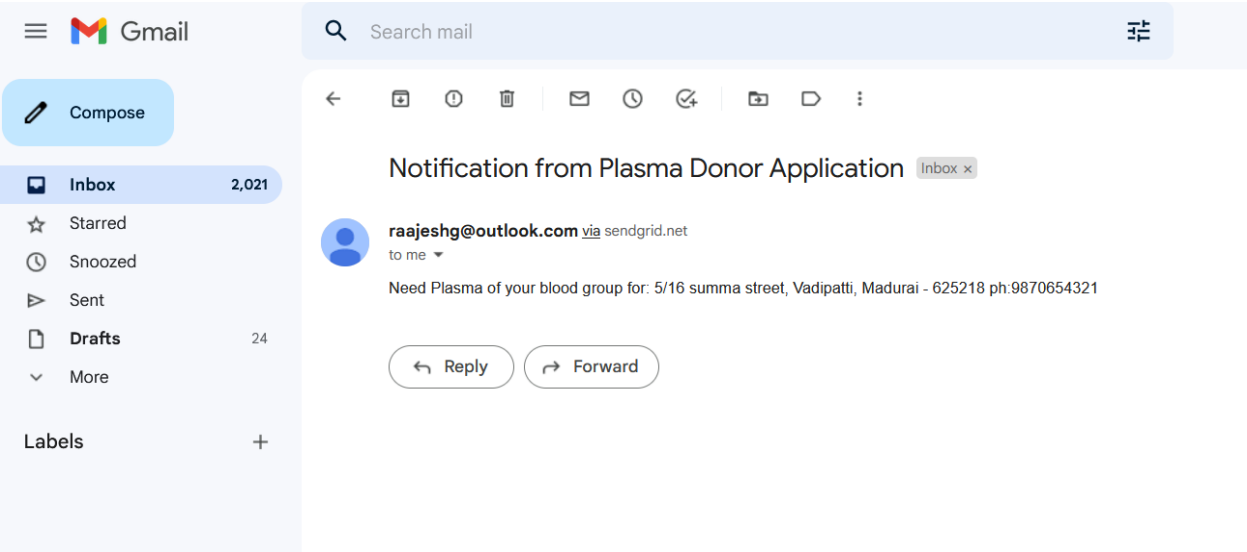
Container Registry:



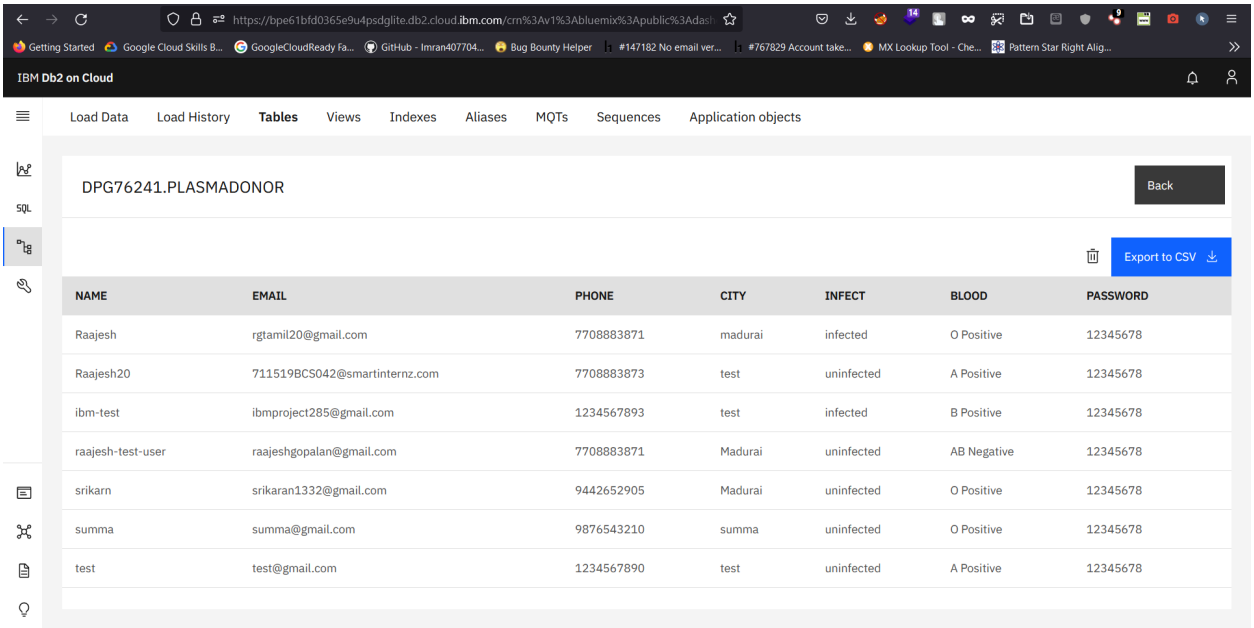
Kubernetes Cluster:



Send Grid:



IBM DB2:



NAME	EMAIL	PHONE	CITY	INFECT	BLOOD	PASSWORD
Raajesh	rgtamil20@gmail.com	7708883871	madurai	infected	O Positive	12345678
Raajesh20	711519BCS042@smartinternz.com	7708883873	test	uninfected	A Positive	12345678
ibm-test	ibmproject285@gmail.com	1234567893	test	infected	B Positive	12345678
raajesh-test-user	raajeshgopalan@gmail.com	7708883871	Madurai	uninfected	AB Negative	12345678
srikarn	srikaran1332@gmail.com	9442652905	Madurai	uninfected	O Positive	12345678
summa	summa@gmail.com	9876543210	summa	uninfected	O Positive	12345678
test	test@gmail.com	1234567890	test	uninfected	A Positive	12345678

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.

11. CONCLUSIONS

The efficient way of finding plasma door for the infected people is implemented using the plasma donor website that is hosted on IBM Cloud platform.

To ensure the smooth functioning of the web site operation. I have hosted the website in IBM Db2 & Kubernates Cluster to make sure the operations are running successfully Cloud lambda function is used and to deploy the application IBM Db2 service is used.

12. FUTURE ENHANCEMENTS

Upgrading the UI that is more user-friendly which will help many users to access the website and also ensures that many plasma donors can be added into the community.

Using elastic load balancer, it helps to handle multiple requests at the same time which will maintain the uptime of the website with negligible downtime.

13. APPENDIX

Source Code:

https://bit.ly/3hSnTvd

GitHub:

https://github.com/IBM-EPBL/IBM-Project-29066-1660120569

Project Demo Link:

https://www.youtube.com/embed/PA0ox3zUR0E