Team ID: PNT2022TMID04052
Project Name: PLASMA DONOR APPLICATION

Brainstorm & Idea Prioritization:
Step-1: Team Gathering, Collaboration and Select the Problem Statement
Step-2: Brainstorm, Idea Listing and Grouping
Step-3: Idea Prioritization

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 helps teams better understand 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's perspective along with his or her goals and challenges

Problem Statement: During the COVID 19 crisis, the requirement of plasma became a high priority and the donor count has become low. Saving the donor information and helping the needy by notifying the current donors list, would be a helping hand. In regard to the problem faced, an application is to be built which would take the donor details, store them and inform them upon a request. Lydia is thirty-five years old. She was affected by COVID-19 and had been admitted in the hospital. Due to COVID, her immunity power became low. She immediately wants a plasma donor. Here, she checks the availability of the plasma donor through our plasma donor application. She checks for the matching criteria of the donor through our application and also verifies whether the donor is within the range(location). Then after finding a perfect donor, he/she donates the plasma. Thus, our application is useful for a COVID patient to improve the immunity and blood circulation.

CUSTOMER SEGMENT(S) :
People who seek for plasma and donate plasma
JOBS-TO-BE-DONE / PROBLEMS :
1.Notify donor when patient needs plasma.
2.Available plasma should reach the needy at the right time
TRIGGERS:
1.Notify donor when patient needs plasma.
2.Available plasma should reach the needy at right time

EMOTIONS: BEFORE / AFTER
Before, people are not much aware about the application and donors list but now they can send request to the donors directly.

AVAILABLE SOLUTIONS:
Existing application can only show the information about donor and recipient but not notify

CUSTOMER CONSTRAINTS:
1.Network connection.
2.Fake credentials.
3.Lack of information.

BEHAVIOUR:
The people should encourage plasma donation and develop their helping tendency to needy people.

CHANNELS OF BEHAVIOUR:
ONLINE:The user should register into the application through mobile with internet connection.
OFFLINE:Creating awareness to youngsters using contact with people, putting out notices and advertisements.

PROBLEM ROOT CAUSE: Due to Covid 19 the need of plasma is high, where the demand for donors arises, andwe need to notify the available donors for the emergency purpose.

YOUR SOLUTION:
If we are in need of plasma, we can request for the donors in the request page of application and if we are ONLINE The user should register into the application through mobile with internet connection. donors we can donate the plasma.

Proposed Solution

1.ProblemStatement (Problem to be solved):

Blood banks are required to maintain account of bloodbags in the inventory. This increases with each blood donation recorded in our system and decreases as they are checked out upon hospital requests. Our system will need to keep the information up to date to ensure correctness of the inventory.

2.Idea / Solution description:

In regard tothe problem, an application is to be built whichwould take the donor details, store themand inform themupon a request.

3. Novelty / Uniquenes:

Donors who wish to donate plasma can donate byuploading theirCOVID19recovery certificate on the donor's page. If the donor is new, they must register before log in.If the donor is an existing user they need to login.Username and e-mailprovidedatthe timeof registration.

4. Social Impact / Customer Satisfaction:

The application isuser friendlyand anyone with basic knowledge can access it. The application seamlessly connects the donor and the person who need it and also hospitals who have availabilityofthe plasma.

5. Business Model (Revenue Model):

People will get used to this application, by collaborating withgovernment and organizing blooddonation camps.

6. Scalability ofthe Solution:

Since the app is going to store its data in cloud,it will continue to be efficient when large number of people uses it. Also when the number of requests for plasma increases,the ca l notification systemwill work fine without any disruption.

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.

Project Workflow:

- The user interacts with the application.
- Registers by giving the details as a donor.
- The database will have all the details and if a user posts a request then the concerned blood group donor will get notified about it.

Functional Requirements:
User Registration: Registration through Form Registration through Email
User Confirmation: Confirmation via Email Confirmation via OTP
User Login: Login using Registered email Id
Sent Request: If plasma is required, the receiver will contact the donor
Contact Donor: Contact the donor directly if a phone number is given
View donation camps: View the list of donation camps happening nearby

Non-functional Requirements:
Usability: The Graphical and user interface is be user-friendly and neat.
Security: The data is be completely stored in a secure database for the donor and recipient to access it safely.
Reliability: It is completely reliable and accessible for a long period of time without bugs. It should satisfy the core purpose of its making.
Performance: It is dynamic and performs well under difficult circumstances.
Availability: The availability of this application is around all the 365 days of the year with day and night availability around different nations.
Scalability: The application is sufficient for many numbers of users and supports to protect all information that are dynamically provided in the application.

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript, Python, Flask
2.	Register to website	The user can able to register in website and fill their details. The user details are Stored in IBM DB2 securely.	Flask app using Kubernetes cluster, IBM DB2.
3.	Login to website	The user interact with the website to login into account. The user details are verified by comparing it with details stored in IBM DB2	Flask app using Kubernetes cluster, IBM DB2.
4.	Request for Donor/Register for donating	The user interact with the website to request for plasma Donor/register for willing to donate plasma.	Flask app using Kubernetes cluster, IBM DB2.
5.	Upload proof in website	The user can able to upload the vaccination certificate and other proofs.	Container registry,
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1 (Email Alert)	To send email alerts to donor when a person requesting Plasma Donor.	SendGrid.
9.	Machine Learning Model	Machine Learning Model can be used for Chatbot.	IBM Watson.
10.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud	Local, Cloud Foundry, Kubernetes.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Flask is an open source framework in python. Similarly Docker is also used.	Flask , Docker
2.	Security Implementations	Only registered users who have specific privileges has access to the website.	IBM DB2
3.	Scalable Architecture	3 – tier architecture, presentation tier, application tier, data tier	Python, IBM cloud services
4.	Availability	The application can be available for user at any time.	Kubernetes, Docker
5.	Performance	The application can handle multiple requests per second.	Kubernetes cluster, IBM

Project Planning Phase Milestone and Activity List

TITLE	DESCRIPTION	DATE
Literature Survey & Information Gathering	Literature survey on the selected project & gathering information by referring the, technicalpapers, research publications etc.	26 SEPTEMBER 2022
Prepare Empathy Map	Prepare Empathy Map in mural to capture the user Pains & Gains, Prepare list of problem statements	22 SEPTEMBER 2022
Ideation	Organizing the brainstorming session and prioritize the top 4 ideas based on the feasibility & importance.	30 SEPTEMBER 2022
Proposed Solution	Prepare the proposed solution document, which includes the problem statement, idea, novelty, business model, social impact, scalability of solution	16 OCTOBER 2022
Problem Solution Fit	Prepare problem - solution fit document.	16 OCTOBER 2022
Solution Architecture	Prepare solution architecture document.	17 OCTOBER 2022
Customer Journey	Prepare the customer journey maps to understand the user interactions & experiences with the application (entry to exit).	20 OCTOBER 2022
Functional Requirement	Prepare the functional requirement document.	19 OCTOBER 2022
Data Flow Diagrams	Draw the data flow diagrams and submit for review.	19 OCTOBER 2022
Technology Architecture	Prepare the technology Architecture diagram.	20 OCTOBER 2022
Prepare Milestone & Activity List	Prepare the milestones & activity list of the project.	26 OCTOBER 2022

Project Development - Delivery of Sprint-1, 2, 3 & 4	Develop & submit the developed code by testing it.	WORK IN PROGRESS

Product Backlog, Sprint Schedule, and Estimation

Sprint	Functional Requirement (Epic)	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.	8	High	Team Lead
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	5	High	Team Member-1
Sprint-2		USN-3	As a user, I can register for the application through Facebook	8	Low	Team Member-2
Sprint-1		USN-4	As a user, I can register for the application through Gmail	8	Medium	Team Member-3
Sprint-1	Login	USN-5	As a user, I can log into the application by entering email & password	10	High	Team Lead, Team Member-1
Sprint-2	Dashboard	USN-6	As a user , I can search the blood group for which I need plasma.	7	High	Team Member-1, Team Member-2
Sprint-2	Dashboard	USN-7	As a user, I can see login page and registration page for which the user login and searches for the required blood group plasma.	8	Medium	Team Lead, Team Member-3
Sprint-3	Dashboard	USN-8	As a customer care executive, I can solve the queries of the users.	9	High	Team Member-2,

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						Team Member-3
Sprint-4	Registration	USN-9	As an Administrator, I can view the database of the registered users.	7	Medium	Team Lead, Team Member-2
Sprint-4	Dashboard	USN-10	As an Administrator, I can view how many members need what kind of blood group for plasma.	9	Low	Team Member-2, Team Member-3
Sprint-4	Dashboard	USN-11	In addition to the customer care executive. I can solve all the queries of the donors as well as the recipient.	5	Medium	Team Lead, Team Member-2
Sprint-1	Home Page	USN-12	As a user, I can view the homepage of the website and look up general plasma treatment information	5	Low	Team Member-2
Sprint-1	Send Request	USN-13	As a user, I can raise a request for plasma donation with specific requirements.	6	High	Team Lead
Sprint-3	View Request	USN-14	As a user, I can view requests for plasma donation verified by admin	8	Medium	Team Member-3
Sprint-4	Maintenance	USN-15	As an admin, I can maintain the databases involved	5	Medium	Team Member-4
Sprint-2	Search for Donor	USN-16	As an admin, I can search for suitable donors in the database based on requests received.	7	High	Team Member-2

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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)

AV=Sprint Duration/Velocity=20/10

AV=2

Sprint	Average Velocity
Sprint-1	6.5
Sprint-2	8
Sprint-3	7.6
Sprint-4	8.5

Total Average Velocity =7.65

Video Link:

https://drive.google.com/file/d/1g4dDHZHcvyX7kzXp6CEG0_XwcF7ENsQq/view?usp=sharing