PLASMA DONOR APPLICATION

Professional Readiness for innovation Employability and Entrepreneurship

PROJECT REPORT

Submitted by

Team

ID:PNT2022TMID12124

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in partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

in

DEPARTMENT OF INFORMATION TECHNOLOGY

**K.S.R. COLLEGE OF ENGINEERING, TIRUCHENGODE
(AUTONOMOUS)**

ANNA UNIVERSITY: CHENNAI 600025

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ANNA UNIVERSITY: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this report **"PLASMA DONOR APPLICATION"** is the bonafide work of **ABIRAMI S M (73151921001), DHEENADHAYALAN S (73151921013), JAIKUMAR M A (73151921022)** and **SUMAN K S (73151921052)** who carried out **19ECI01- Professional Readiness for Innovation, Employability and Entrepreneurship** project offered by IBM and Anna University, Chennai.

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PROJECT CALENDER

Phase	Phase Description	Week	Date	Activity Details
1	Preparation Phase (Pre-requisites, Registrations, Environment Set-up, etc.)	2	22 - 27 Aug 2022	Creation GitHub account & collaborate with Project repository in project workspace
2	Ideation Phase (Literature Survey, Empathize, Defining Problem Statement, Ideation)	2	29 Aug –3rd Sept 2022	Literature survey (Aim, objective, problem statement and need for the project)
		3	5 - 10th Sept 2022	Preparing Empathy Map Canvas to capture theuser Pains & Gains
		4	12 - 17 Sept 2022	Listing of the ideas using brainstorming session
3	Project Design Phase -I (Proposed Solution, Problem- Solution Fit, Solution Architecture)	5	19 - 24 Sept 2022	Preparing the proposed solution document
		6	26 Sept – 01Oct 2022	Preparing problem - solution fit document &Solution Architecture
4	Project Design Phase -II (Requirement Analysis, Customer Journey, Data Flow Diagrams, Technology Architecture)	7	3 - 8 Oct 2022	Preparing the customer journey maps
		8	10 - 15 Oct 2022	Preparing the Functional Requirement Document & Data-Flow Diagrams and TechnologyArchitecture
5	Project Planning Phase (Milestons & Tasks, Sprint Schedules)	9	17 - 22 Oct 2022	Preparing Milestone & Activity List, SprintDelivery Plan
6	Project Development Phase (Coding & Solutioning, acceptance Testing, Performance Testing)	10	24 - 29 Oct 2022	Preparing Project Development - Delivery of Sprint-1
		11	31 Oct - 5 Nov 2022	Preparing Project Development - Delivery of Sprint-2
		12	7 - 12 Nov 2022	Preparing Project Development - Delivery of Sprint-3
		13	14 - 19 Nov 2022	Preparing Project Development - Delivery Sprint-4 of

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CHAPTER 1

INTRODUCTIO

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1.1 ABSTRACT

Plasma Donor Application is aimed to developing a Plasma Donor information via online. The numbers of blood donor are very less when compared with other countries. In our project, the consumer wants to make request for blood and soon the donor will be asked to enter an individual's personal details. The system that is designed to store, process, retrieve and analyse information concerned with the administrative and inventory management within a blood bank. At the emergency time of blood needed, we can check for blood donor nearby using GPS. The admin is the main authority who can do addition, deletion and modification if it's required. Once we can't able to reach the accepted donor and soon the application will send a request to another donor which will be represented in queue data structure. If the donor accepts the request, then a one-time password (OTP) will be sent to the donor for verification. Aim is to provide transparency in this field, make the process of obtaining blood from a blood bank hassle free and corruption free and make the system of Plasma Donor Application effective. Plasma donation app provide the list of donors in your city/area. Once the donor donates the blood it will automatically remove the donor details for next three months. This application takes care of different modules and their associated reports which are produced as per the applicable strategies and standards that are put forwarded by the administrative staff. Application is developed in a manner that is easily manageable, time saving and relieving one from manual works. The requirement of the blood has to be requested and we supply the information of the donor. The donors can update their status whether they are available or not.

1.1   PROJECT OVERVIEW

Category: Cloud App

Development Team ID :

PNT2022TMID12124

Skills Required: IBM Cloud, HTML, Javascript, IBM Cloud Object Storage, Python Flask, Kubernetes, Docker, IBM DB2, IBM Container Registry

The Blood Donation Agent is to create an e-Information about the donor and organization that are related to donating the blood. Through this application any person who is interested in donating the blood can register himself in the same way if any organization wants to register itself with this site that can also register. Moreover, if any general consumer wants to make request blood online he can also take the help of this site. Admin is the main authority who can do addition" deletion" and modification if required.

1.2 PURPOSE

This project is aimed to developing an online Blood Donation Information. The entire project has been developed keeping in view of the distributed client server computing technology" in mind.

The Blood Donation Agent is to create an e-Information about the donor and organization that are related to donating the blood. Through this application any person who is interested in donating the blood can register himself in the same way if any organization wants to register itself with this site that can also register. Moreover, if any general consumer wants to make request blood online he can also take the help of this site. Admin is the main authority who can do addition" deletion" and modification if required.

The project has been planned to be having the view of distributed architecture" with centralized storage of the database. The application for

the storage of the data has been planned. Using the constructs of MS-SQL server and all the user interfaces have been designed using the ASP.Net technologies.

The database connectivity is planned using the "SQL Connection" methodology. The standards of security and data protective mechanism have been given a big choice for proper usage. The application takes care of different modules and their associated reports" which are produced as per the applicable strategies and standards that are put forwarded by the administrative staff.

The entire project has been developed keeping in view of the distributed client server computing technology" in mind. The specification has been normalized up to 3NF to eliminate all the anomalies that may arise due to the database transaction that are executed by the general users and the organizational administration. The user interfaces are browser specific to give distributed accessibility for the overall system. The internal database has been selected as MS- SQL server 2000.

The basic constructs of table spaces" clusters and inde0es have been exploited to provide

higher consistency and reliability for the data storage. The MS-SQL server 2000 was a choice a sit provides the constructs of high-level reliability and security. The total front end was dominated using the A%(.)et technologies. At all proper levels high care was taken to check that the system manages the data consistency with proper business rules or validations.

The database connectivity was planned using the latest "SQL Connection" technology provided by Microsoft corporation. The authentication and authorization was cross checked at all the relevant stages. The user level accessibility has been restricted into two zones namely.

CHAPTER 2

LITERATURE SURVEY

2.1   EXISTING PROBLEM

Applying optimization methods to healthcare management and logistics is a developing research area with numerous studies. Specifically, facility location, staff rostering, patient allocation, and medical supply transportation are the main themes analyzed. Optimization approaches have been developed for several healthcare related problems, ranging from the resource management in hospitals to the delivery of care services in a territory. However, optimization approaches can also improve other services in the health system that have been only marginally addressed, yet. One of them is the Blood Donation (BD) system, aiming at providing an adequate supply of blood to Transfusion Centres (TCs) and hospitals. Blood is necessary for several treatments and surgeries, and still a limited resource.

The need for blood is about ten million units per year in the USA, 2.1 in Italy and 2 in Turkey; moreover, people still die in some countries because of inadequate supply of blood products (World Health Organization 2014). Hence, BD plays a fundamental role in healthcare systems, aiming at guaranteeing an adequate blood availability to meet the demand and save lives. In Western countries, blood is usually collected from donors, i.e., unpaid individuals who give blood voluntarily. Blood is classified into groups (A and subgroups, B, 0 or AB) and based on the Rhesus factor (Rh+ or Rh-), and each donor should be correctly matched with the patient who receives his/her blood. Moreover, as it may transmit diseases, blood must be screened before utilization.

2.2 REPORT OF EXISTING SYSTEM

[1]   In "Android blood bank" by prof. Snigdha proposed an application for blood donor. In that application the donor can find the exact path by using GPS (Global Positioning System). The detail of blood donors will be saved private data and confidential data are only viewed by the administrator. They have methodologies like PHP, MY SQL, Android.

[2]   In "MBB: A Life Saving Application" by Narendra Gupta has proposed a method to create a website with android application. In this application, it has been proposed that the donor is tracked by Geographic Information System (GIS). The purpose of their website is used to

update their current system where data can only be viewed by authorized user. They contain two device type:

       1)An android phone with android OS

       2)   A computer for website and database which is used to

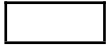   store the information about the donor.

[3]   In "Android Based Health Application in Cloud Computing for Blood Bank" by Sayali Dhond has proposed android based application for blood donor, in which the donor's information are stored in cloud. They user should request blood on the cloud and the information are sent to nearby hospital or blood donor who are register on cloud.

[4]   In "The Optimization of Blood Donor Information and Management System bt Technopedia" by P. Priya has proposed a method of creating website with android application in which the blood donor can easily available within the required time. The donor who are nearby location are easily tracked by GIS. In this application the website is to update the information of donor who have already given blood in various hospital. While comparing to manual system, computer-based information system is time consuming, laborious.

S.NO	TITLE	AUTHORS	ABSTRACT	DRAWBACKS
1	Developing a plasma	Aishwarya R Gowri Jain	A plasma is a liquid portion of the blood, over 55% of	• Internet: It would require
	donor application using Function-asa-serice in AWS	University, Department of MCA, computer science	human blood is plasma. Plasma is used to treat various infectious diseases and it is one of the oldest methods known as plasma therapy. Plasma therapy is a process where blood is donated by recovered patients in order to establish antibodies that fights the infection. In this project plasma donor application is being developed by using AWS services. The services used are AWS Lambda, API gateway, DynamoDB, AWS Elastic Compute Cloud with the help of these AWS	an internet connection for the working of the website. • handle multiple requests at the same time

			services, it eliminates the need of configuring the servers and reduces the infrastructural costs associated with it and helps to achieve serverless computing. For instance, during COVID 19 crisis the requirement for plasma increased drastically as there were no vaccination found in order to treat the infected patients, with plasma therapy the recovery rates where high but the donor count was very low and in such situations it was very important to get the information about the plasma donors. Saving the donor information and notifying about the current donors would be a helping hand as it can save time and help the users to track down the necessary information about the donors.	
2	Optimization of Blood Donor Information and	• K. Yamini, M. E(CSC), SVCET, Thirupachur, India	Emergency situations, such as accidents, create an immediate, critical need for specific blood type. In addition to emergency	• The accuracy of the location displayed on the map was beyond the
	Management System	• R. Devi, Asst. Professor, SVCET, Thirupachur, India	requirements, advances in medicine have increased the need for blood in many ongoing treatments and elective surgeries. Despite increasing requirements for blood, only about 5% of the Indian population donates blood. In this paper we propose a new and efficient way to overcome such scenarios with our project. We have to create a new idea, just touch the button. Donor will be prompted to enter an individual's details, like name, phone number,	scope of this Project. • Only Android was used as a mobile operating system to test the application

and blood type. After that

			your contact details will appear in alphabetical order on the screen; the urgent time of a blood requirement, you can quickly check for contacts matching a particular or related blood group and reach out to them via Phone Call/SMS through the Blood donor App.	
3	Blood Bank Management Information System in India	• Vikas Kulshreshtha Research Scholar, • Dr.Sharad Maheshwari, Associate Professor	A blood bank is a bank of blood or blood components, gathered as a result of blood donation, stored and preserved for later use in blood transfusion. To provide web based communication there are numbers of online web based blood bank management system exists for communicating between department of blood centers and hospitals, to satisfy blood necessity, to buy, sale and stock the blood, to give information about this blood. Manual systems as compared to Computer Based Information Systems are time consuming, laborious, and costly. This paper	• Do not provide the better inventory solution to the end use • It requires an active internet connection.

			introduces the review of the main features, merits and demerits provided by the existing Web -Based Information System for Blood Banks. This study shows the comparison of various existing system and provide some more idea for improve the existing system. First I will give some basic introduction about blood banks then I will try to provide comparative study of some existing web based blood bank system. After that I will introduce some new idea for improving the existing techniques used in web based	

			blood bank system and at end I will conclude this paper	
4	A Research Paper on Blood Donation Management System	• Devanjan K. Srivastava • Utkarsh Tanwar • M.G.Krishna Rao • Priya Manohar • Balraj Singh	analytical processing. The proposed system would enable people to register as a donor to make themselves available whenever in need of their blood type. We have introduced a search tab to search available people ready to donate. In our proposed system in the donor registration, health - related details would be updated in the blood management system database for all to see.	• Internet Connection is mandatory • There is no proper centralized database for registered donors
5	A Study on Blood Bank Management	• A. Clemen Teena, K • Sankar • S. Kannan	'Blood Bank Information System' will be an information management system which helps to manage the records of donors and patients at a blood bank. The system will allow the authorized blood bank officer to login using a secret password and easily manage the records of the blood donors and the patients in need of blood	• No search filter available • UI improvement in Login page

2.3 PROBLEM STATEMENT DEFINITION

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.
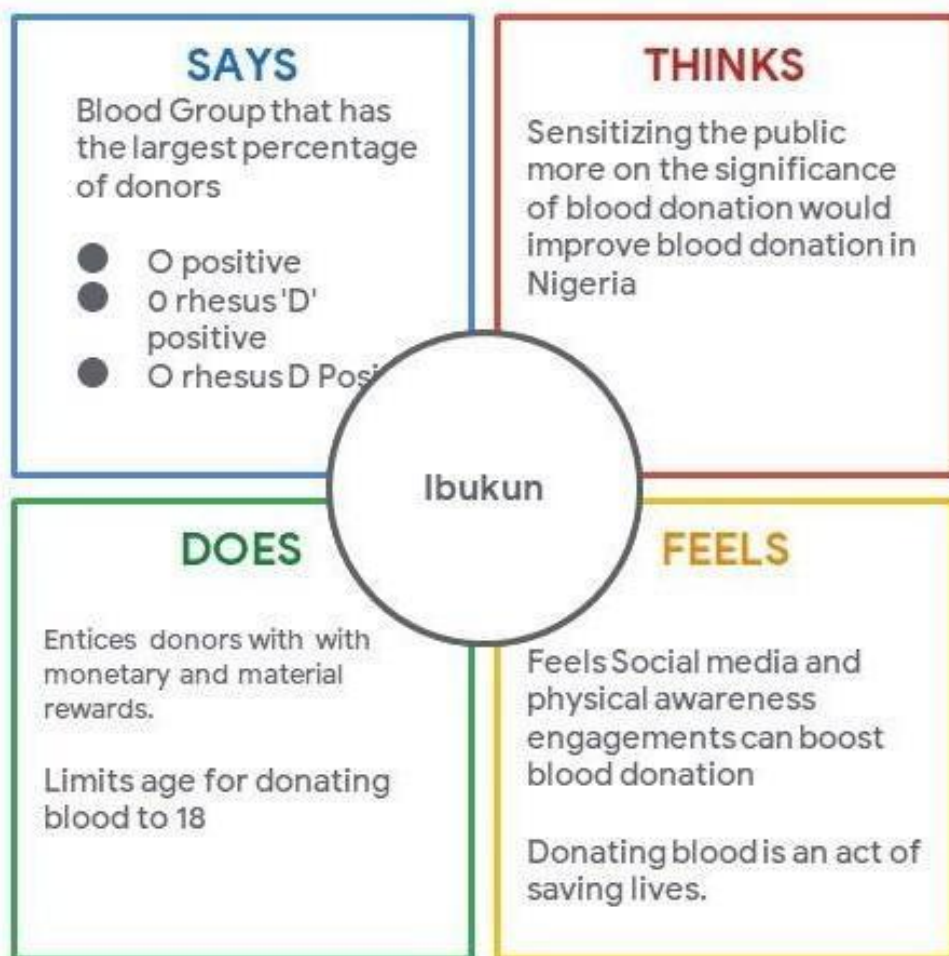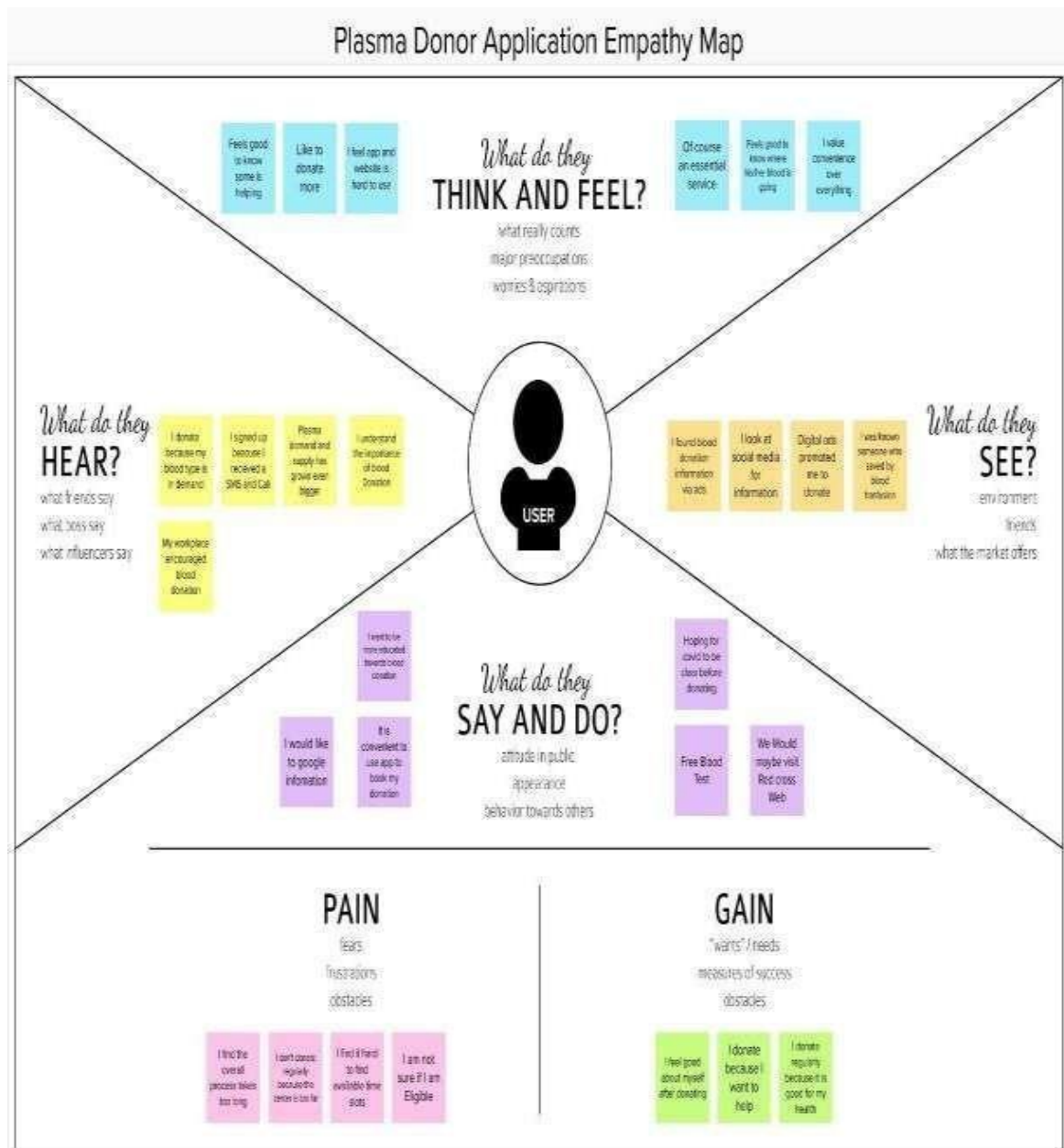
CHAPTER 3

IDEATION & PROPOSED SOLUTION

3.1   EMPATHY MAP CANVAS

An empathy map is a collaborative visualization used to express clearly what one knows about a particular type of user. It externalizes knowledge about users in order to create a shared understanding of user needs, and aid in decision making.
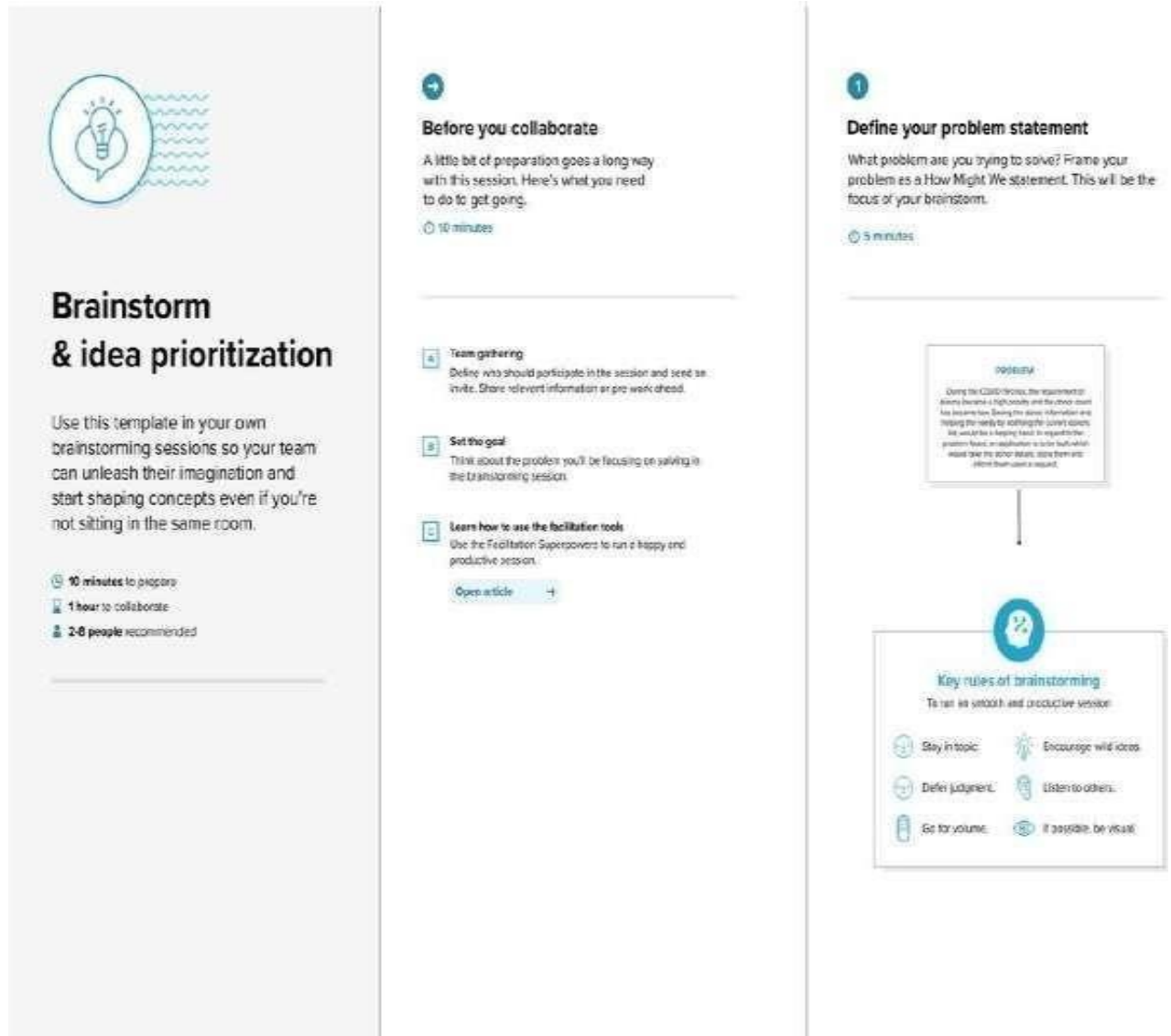
Empathy maps are split into 4 quadrants (Says, Thinks, Does, and Feels), with the user in the middle. Empathy maps provide a glance into who a user is as a whole. The *Says* quadrant contains what the user says or what he needs. The *Thinks* quadrant captures what the user is thinking throughout the experience. The *Does* quadrant encloses the actions the user takes. The *Feels* quadrant is the user's emotional state.

SAYS

Blood Group that has the largest percentage of donors

- O positive
- O rhesus 'D' positive
- O rhesus D Pos...

THINKS

Sensitizing the public more on the significance of blood donation would improve blood donation in Nigeria

Ibukun

DOES

Entices donors with with monetary and material rewards.

Limits age for donating blood to 18

FEELS

Feels Social media and physical awareness engagements can boost blood donation

Donating blood is an act of saving lives.

Plasma Donor Application Empathy Map

3.2 IDEATION & BRAINSTORMING

Step 1: Team Gathering Collaboration and Select the Problem Statement

Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

- 10 minutes to prepare
- 1 hour to collaborate
- 2-8 people recommended

Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

⏱ 10 minutes

Team gathering
Define who should participate in the session and send an invite. Share relevant information or pre work ahead.

Set the goal
Think about the problem you'll be focusing on solving in the brainstorming session.

Learn how to use the facilitation tools
Use the Facilitation Superpowers to run a happy and productive session.

Open article →

Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

⏱ 5 minutes

Key rules of brainstorming
To run a smooth and productive session

- Stay in topic
- Defer judgment
- Go for volume
- Encourage wild ideas
- Listen to others
- If possible, be visual

Step 2: Brainstorm and Idea Listing

Abirami S M

Donation camps	Plasma available places nearby	Check donor eligibility
Steps to donate	Benefits of donating	Certificate of appreciation
Schedule appointment	Webinars to create awareness	Option of sending requests

Suman K S

Contact for emergency	Registration	Sending mails
Clinical services	Book appointments	Step by step procedure
Request pending	Use of donation app	periodic checkups

Dheenadhayalan S

Do's and Dont's after plasma donation	To inform to others about camps	checking the body condition
Need immediate response	More articles	Patient medical records
Report for donation	To get more details	Best time to donate

Jai Kumar M A

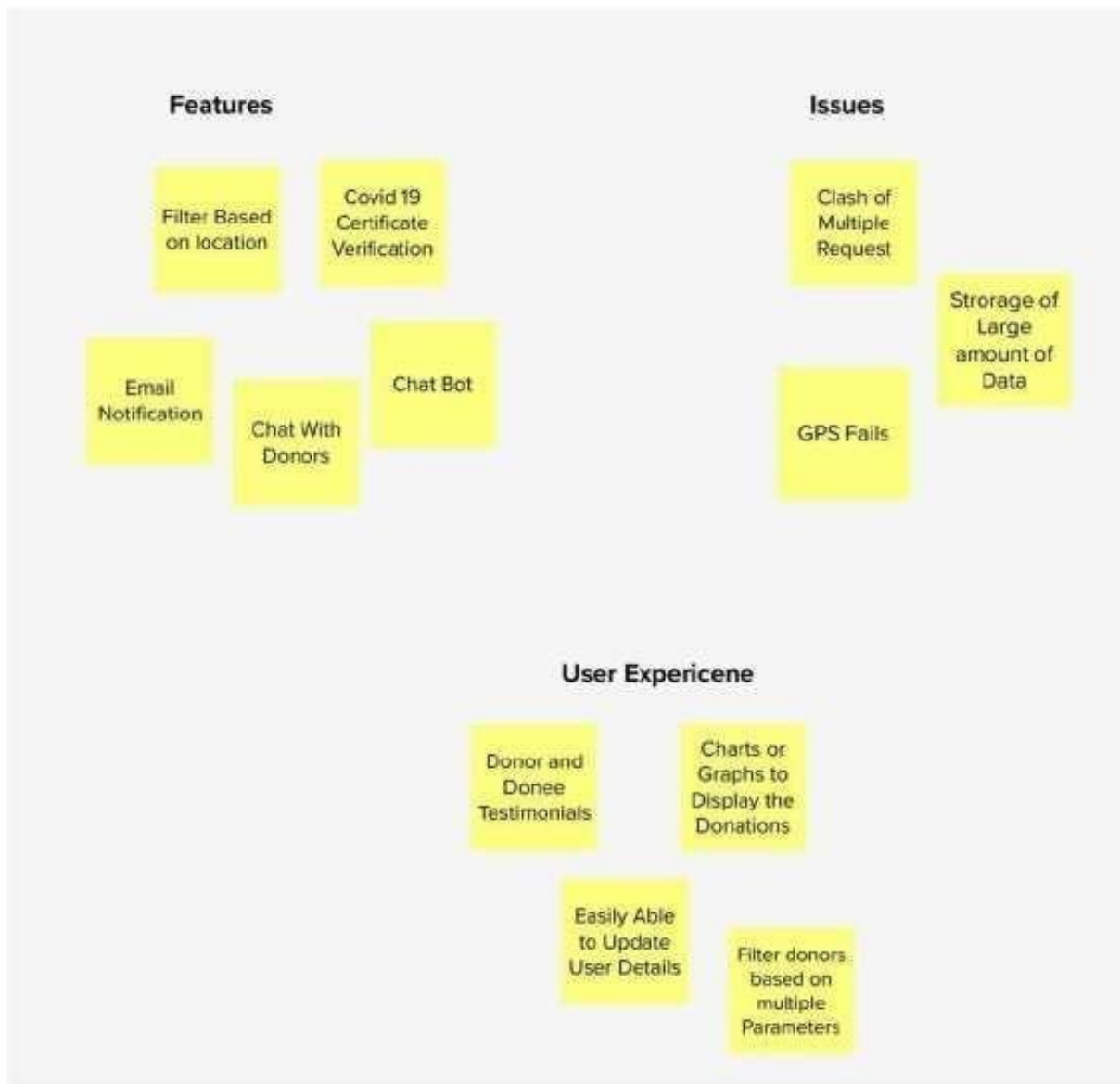| Registration details | Create guide | checking the requirements |
| Web app | Information about receiver | How much ml required |
| What is the age limit | How to reach the place | Correct time to donate |

Step 3: Grouping

3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

🕐 20 minutes

Features

Filter Based on location

Covid 19 Certificate Verification

Email Notification

Chat Bot

Chat With Donors

Issues

Clash of Multiple Request

Strorage of Large amount of Data

GPS Fails

User Expericene

Donor and Donee Testimonials

Charts or Graphs to Display the Donations

Easily Able to Update User Details

Filter donors based on multiple Parameters

Step 4: Idea Prioritization

4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

⏱ 20 minutes

Importance

If each of these tasks could get done without any difficulty or cost, which would have the most positive impact?

- Ensuring Easy acessible of Donor Details
- Security of Sharing Location
- Licensing Policies
- Display Donors according to Blood Type
- Confidentiality
- Handling Pending Request
- Instant Notification
- User Verification
- Educating the donors and create awareness

Feasibility

Regardless of their importance, which tasks are more feasible than others? (Cost, time, effort, complexity, etc.)

Step 5: Top Ideas

3.2 PROPOSED SOLUTION

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.

S. No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	• When the details are maintained manually, it is complicated for donors and patients. • Physical Man power is required to manage the Data and process the Plasma Donation. • In Pandemic situation, it is difficult to have manpower, so it is difficult to get the Plasma donor data. • Needed an Automated system to Manage donor and Patient data. • The data is needed to be accessible from anywhere and anytime
2.	Idea / Solution description	• Making a Web application which is user friendly as well as has more features for serving the people better. • Reduced workload by storing the details in cloud storage. • No Manpower / Remote Manpower only will be needed. • Data Availability for 24x7x365.

3.	Novelty / Uniqueness	• User friendly UI to access the web application by all the people • If a Donating user is available, they can request for plasma. • The web application will automatically send the email containing the Patient's contact details. • The Donor may contact the Patient and can reach the patient to donate the blood. • Voluntary donors can fill out a registration form and can get the Request Email on demand.
4.	Social Impact / user Satisfaction	• Impact between the users on the application is made easy communication and make them more secured and comfort • Find the donors in near places • Connect the donors and patients Easily. • With all of the authenticated information, this platform will assist the public in donating or obtaining their plasma needs.
5.	Business Model (Revenue Model)	• By collaborating with government and organizing Plasma Donation Camps and store them instead requesting Plasma on demand
6.	Scalability of the Solution	• The main goal of the application is to provide high Scalability by given more option for user to select their interest(donate/assist) • The aim is to build a web application using Cloud with advanced features that will help to overcome the barrier between Plasma bank, Donor and Patient • Since the project uses IBM DB2 database it can handle with multiple requests in various regions • As this is a web application and uses cloud storage, any further enhancements in technology can be incorporated within this application. • Chatbot for Queries • Genuineness of the Patient will be tested

3.3   PROBLEM SOLUTION FIT

The proposed solution for Inventory management system for retailers
is shown here,

| 1. CUSTOMER SEGMENTS(S)

• Donors
• Patient
• Hospitals | 5. AVAILABLE SOLUTIONS

The existing application used only collecting details pf donors but it does not notify them at a right time. Our solution is building a website that notifies the donors at a right time. | 8. CHANNELS OF BEHAVIOR

ONLINE:
Can use the website to find donors

OFFLINE:
Can use the record maintain by the hospital |
|---|---|---|
| 2. JOB-TO-BE-DONE

• Difficult to find donors at the right time
• Donors not aware of plasma requirements | 6. CUSTOMER CONSTRAINTS

• Regular interval connection
• Donor health condition
• Unavailability of plasma | 9. PROBLEM ROOT CAUSE

• Not able to find donors at the right time of emergency
• Count of donors has been tremendously decreasing since hospital management couldn't contact them |
| 3. TRIGGERS

Blood donation improves of saves lives and enhances social solidarity. It is also influenced by increasing deaths due to unavailability of plasma at required times.

4. EMOTIONS:

Before:
Patient /Hospital find it hard to get a right resource to get A plasma leaving them upset.
After:
The donors and customers haves a feeling of satisfaction. | 7. BEHAVIOUR

The customer comes forward to
• Attend plasma donation camps
• Donate plasma | 10. YOUR SOLUTION

Creating website which will provide information about the available donors and plasma. If not available the customer will be notified when plasma is available. |

CHAPTER 4

REQUIREMENT ANALYSIS

4.1   FUNCTIONAL REQUIREMENTS

These are the requirements that the end user specifically demands as basic facilities that the system should offer. All these functionalities need to be necessarily incorporated into the system as a part of the contract. These are represented or stated in the form of input to be given to the system, the operation performed and the output expected. They are basically the requirements stated by the user which one can see directly in the final product, unlike the non- functional requirements.

FR No.	Functional Requiremen (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through mobile/ laptop/ PC Registration through telegram group
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Donor Notification	Get notification through register mobile number Get notification through register Email
FR-4	Plasma needer details(person)	Availability details in App Availability details in telegram group
FR-5	Plasma availability(blood)	Availability details in App Availability details in telegram group

4.2   NON-FUNCTIONAL REQUIREMENTS

These are basically the quality constraints that the system must satisfy according to the project contract. The priority or extent to which these factors are implemented varies from one project to other. They are also called non-behavioral requirements.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	● Can new user quickly adapt to the software without helpless ● the most common operations streamlined to be performed quickly
NFR-2	**Security**	● The system had user or role-based security ● any operations done by user will keep private
NFR-3	**Reliability**	● Whenever the user changes his scheduled ● use mobile and desktop anywhere
NFR-4	**Performance**	● The performance of the app is in high level because it can hole only few data so it performance will fast
NFR-5	**Availability**	● User can use mobile and desktop anywhere in network ● User can use application 24/7
NFR-6	**Scalability**	● The capacity of an app is handled by cloud so it has high scalability and elasticity

CHAPTER 5
PROJECT
DESIGN

5.1   DATA FLOW DIAGRAMS

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

STEPS:

1.   Donor can enter their details and check their eligibility.

2.   Hospital In-Charge enter their hospital details and register themselves.

3.   Recipients can enter their details and book their slots.

4.   After Donor's donation finished, In-charge update the details in database.

5.   After Recipient's request for plasma, In-charge has to allocate the the

      appropriate plasma for recipient.

6.   After the process finished, all users enter their feedback totheir appropriate requests.

7.   All the changes can enter into DB2.

Level 0:
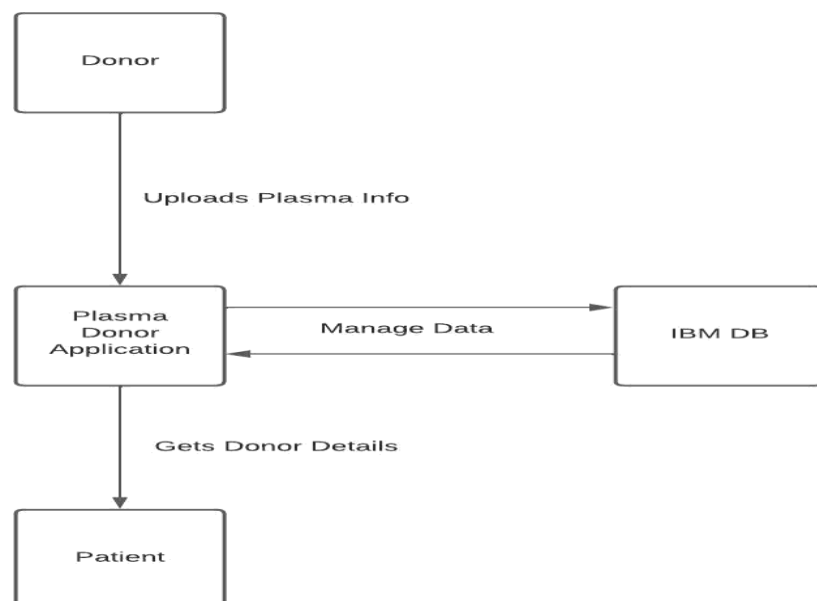
Level 1:
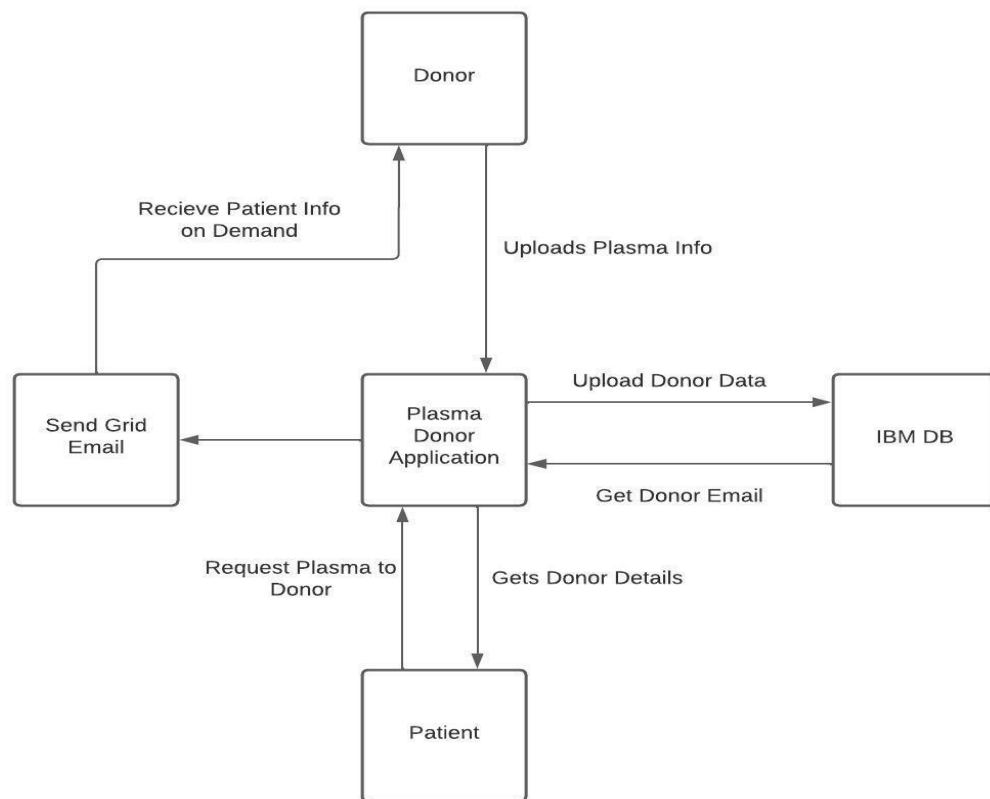
5.2   SOLUTION & TECHNICAL ARCHITECTURE

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

- Find the best tech solution to solve existing business problems.
- Describe the structure, characteristics, behaviour, and other aspects of the software to project stakeholders.
- Define features, development phases, and solution requirements.
- Provide specifications according to which the solution is defined, managed, and delivered.

Website

Plasma Donor

Customer details

Donor Details

Notification

IBM **Cloud**

Plasma Donor

Hospital Management

Cluster

Worker Node

Application

Kubernetes Cluster

User

IBM DB2

Stores the Customers details

Send an Email Alert If expenses made above the limit

SendGrid

Container Registry
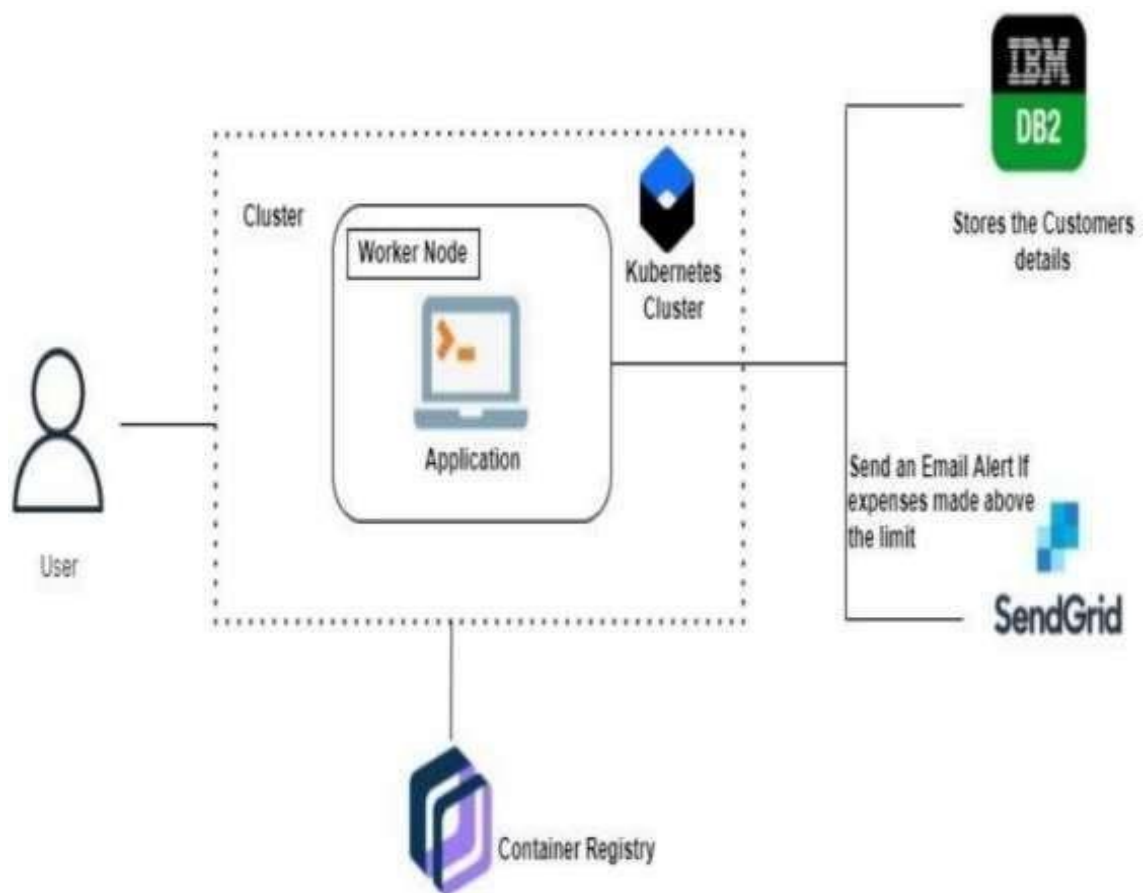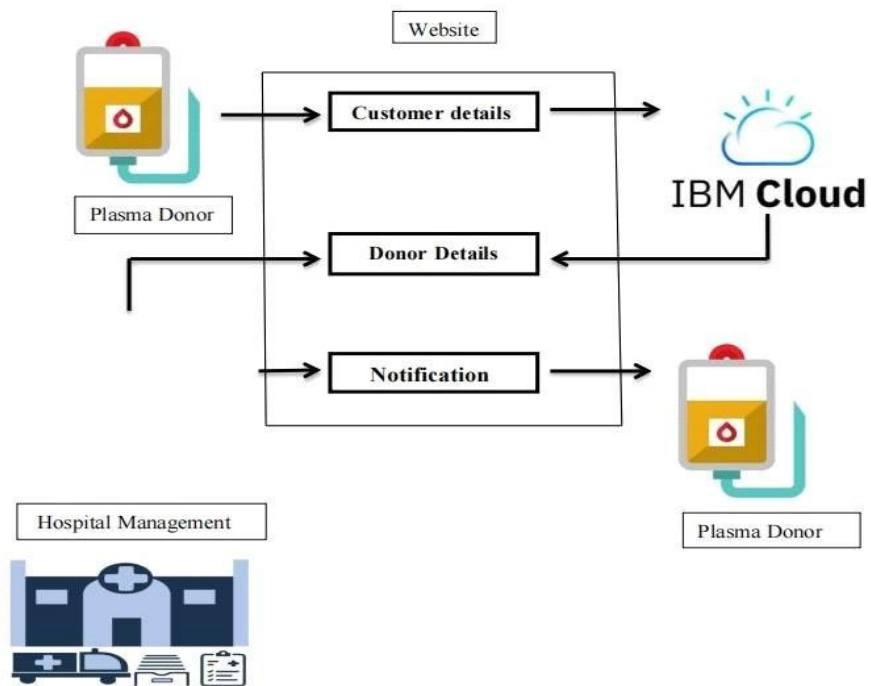
SOLUTION ARCHITECTURE
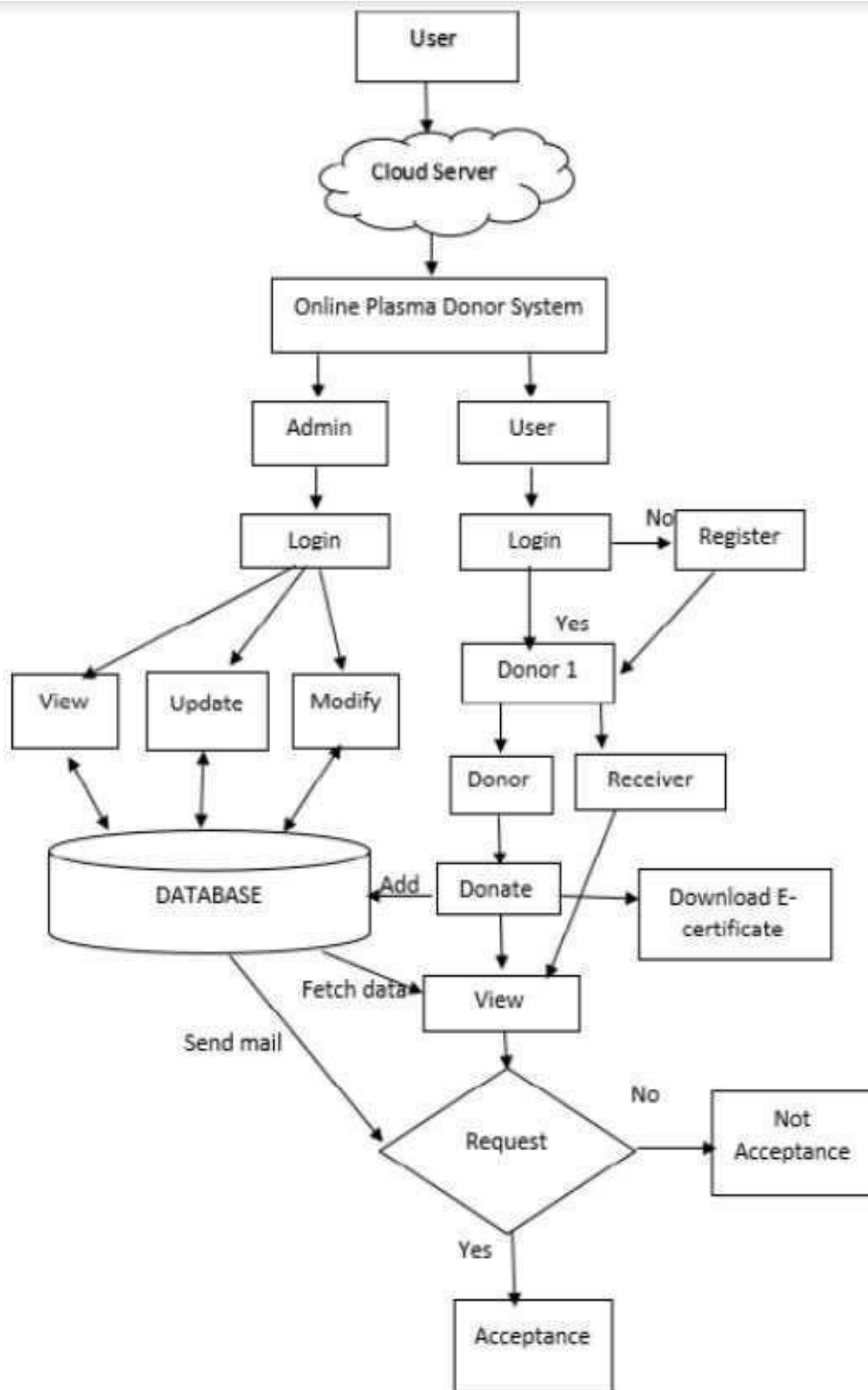
5.3 USER STORIES

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Donor / Recipient / Hospital In-Charge (Mobile/Desktop 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 or SMS 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 Gmail and Phone Number.	I can register & access the dashboard with Gmail or any kind of Login	Medium	Sprint-2
	Login	USN-4	As a user, I can log into the application by entering email or phone number & password	I can Log into the Application by using Email ID and Password	High	Sprint-1
Donor / Recipient / Hospital In-Charge (Web user)	Dashboard	USN-5	As a user, I can be allowed to choose the three options like Donor, Recipient and Hospital In-Charge.	I am a Donor and need to access only Donor registration with my credentials	Medium	Sprint-3
		USN-6		I am a Recipient and need to access only Recipient registration with my credentials.	Medium	Sprint-3
		USN-7		I am a Hospital In-Charge and need to access only In-Charge registration with my hospital's credentials	Medium	Sprint-3
Donor	Donor's Page	USN-8	As a Donor, I can enter my details and check my eligibility, and book my slot for donation	I am donor, I can get the slot timings and nearby hospital details.	High	Sprint-4
Recipient	Recipient's Page	USN-9	As a Recipient, I can enter my details and book my slot in a hospital as any nearby.	I am a recipient; I can get the appropriate Plasma present in nearby areas.	High	Sprint-4
Hospital In-Charge	Hospital In-Charge Page	USN-10	As a Hospital In-Charge, I can enter my details and hospital details as per the conditions.	I am a Hospital In-Charge; I can check the user credentials and do my process	High	Sprint-4
All users (Donor, Recipient, Hospital In-Charge)	At last feedback page	USN-11	Finally, all users enter their feedback and receive feedbacks and issues.	I am a user; I can send and receive queries through feedback pages.	Medium	Sprint-4

CHAPTER 6

PROJECT PLANNING & SCHEDULING

6.1 SPRINT PLANNING & ESTIMATION

Sprint planning is an event in scrum that kicks off the sprint. The purpose of sprint planning is to define what can be delivered in the sprint and how that work will be achieved. Sprint planning is done in collaboration with the whole scrum team.

The sprint is a set period of time where all the work is done. However, before leap into action it is necessary to set up the sprint. It needs to decide on how long the time box is going to be, the sprint goal, and where it is going to start. The sprint planning session kicks off the sprint by setting the agenda and focus. If done correctly, it also creates an environment where the team is motivated, challenged, and can be successful.

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.	15	High	Abirami S M Dheena Dhayalan S Suman K S Jaikumar M A
Sprint-1	Confirmation	USN-2	As a user, I will receive confirmation email once I have registered for the application	5	Medium	Abirami S M Dheena Dhayalan S Suman K S Jaikumar M A
Sprint-2	Login	USN-6	As a user, I can log into the application by entering email & password	10	High	Abirami S M Dheena Dhayalan S Suman K S Jaikumar M A
Sprint-2	Dashboard	USN-7	As a user, I can search request and a quick snap is displayed in the dashboard.	10	High	Abirami S M Dheena Dhayalan S Suman K S Jaikumar M A
Sprint-3	Sorting Functionality	USN-3	As a user, i can sort the requests based on the location,blood group,hospital name	10	Medium	Abirami S M Dheena Dhayalan S Suman K S Jaikumar M A

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.	15	High	Abirami S M Dheena Dhayalan S Suman K S Jaikumar M A
Sprint-1	Confirmation	USN-2	As a user, I will receive confirmation email once I have registered for the application	5	Medium	Abirami S M Dheena Dhayalan S Suman K S Jaikumar M A
Sprint-2	Login	USN-6	As a user, I can log into the application by entering email & password	10	High	Abirami S M Dheena Dhayalan S Suman K S Jaikumar M A
Sprint-2	Dashboard	USN-7	As a user, I can search request and a quick snap is displayed in the dashboard.	10	High	Abirami S M Dheena Dhayalan S Suman K S Jaikumar M A
Sprint-3	Sorting Functionality	USN-3	As a user, i can sort the requests based on the location,blood group,hospital name	10	Medium	Abirami S M Dheena Dhayalan S Suman K S Jaikumar M A

6.2   SPRINT DELIVERY SCHDULE

The sprint delivery plan is scheduled accordingly as shown in the below table 6.2 which consists of the sprints with respective to their duration, sprint start and end date and the releasing data.

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.	15	High	Abirami S M Dheena Dhayalan S Suman K S Jaikumar M A
Sprint-1	Confirmation	USN-2	As a user, I will receive confirmation email once I have registered for the application	5	Medium	Abirami S M Dheena Dhayalan S Suman K S Jaikumar M A
Sprint-2	Login	USN-6	As a user, I can log into the application by entering email & password	10	High	Abirami S M Dheena Dhayalan S Suman K S Jaikumar M A
Sprint-2	Dashboard	USN-7	As a user, I can search request and a quick snap is displayed in the dashboard.	10	High	Abirami S M Dheena Dhayalan S Suman K S Jaikumar M A
Sprint-3	Sorting Functionality	USN-3	As a user, i can sort the requests based on the location,blood group,hospital name	10	Medium	Abirami S M Dheena Dhayalan S Suman K S Jaikumar M A

Velocity:

We have a 6-day sprint duration, and the velocity of the team is 18 (points per sprint), except the Sprint-4 is 20. To calculate the team's average velocity (AV) per iteration unit (story points per day)

$$AV = \frac{sprint\ duration}{velocity} = \frac{20}{10} = 2$$

Number of Sprints	Sprint-1	Sprint-2	Sprint-3	Sprint-4
Total Story Points	18	18	18	20
Duration	6 Days	6 Days	6 Days	6 Days
Average Velocity per Sprint	AV= 18/6 = 3	AV= 18/6 =3	AV= 18/6 =3	AV= 20/6 = 3.33

Total number of days = sprint 1 + sprint 2 + sprint 3 + sprint 4 = 6 + 6 + 6 + 6 = 24

Total number of story points = 18 + 18 + 18 + 20 = 74

Average velocity per sprint = 74 / 24 ~= 3.083333 = 3

6.3   REPORTS FROM JIRA

TO DO 2 ISSUES

Authentication via gmail and email account

LOGIN

PLSM-3   2

Form for donation created

LOGIN

PLSM-5   1

IN PROGRESS 3 ISSUES

Create Registration form

LOGIN

PLSM-1   2

Form authentication handling

LOGIN

PLSM-2   1

Creating database and storing user information

DATABASE

PLSM-4   2

DONE ✓

DEC

CHAPTER 7
CODING & SOLUTIONING

7.1 IBM CLOUD

The IBM Cloud platform combines platform as a service (PaaS) with infrastructure as a service (IaaS) to provide an integrated experience. The platform scales and supports both small development teams and organizations, and large enterprise businesses. Globally deployed across data centers around the world, the solution you build on IBM Cloud spins up fast and performs reliably in a tested and supported environment you can trust!

IBM Cloud provides solutions that enable higher levels of compliance, security, and management, with proven architecture patterns and methods for rapid delivery for running mission-critical workloads.

IBM Cloud Platform
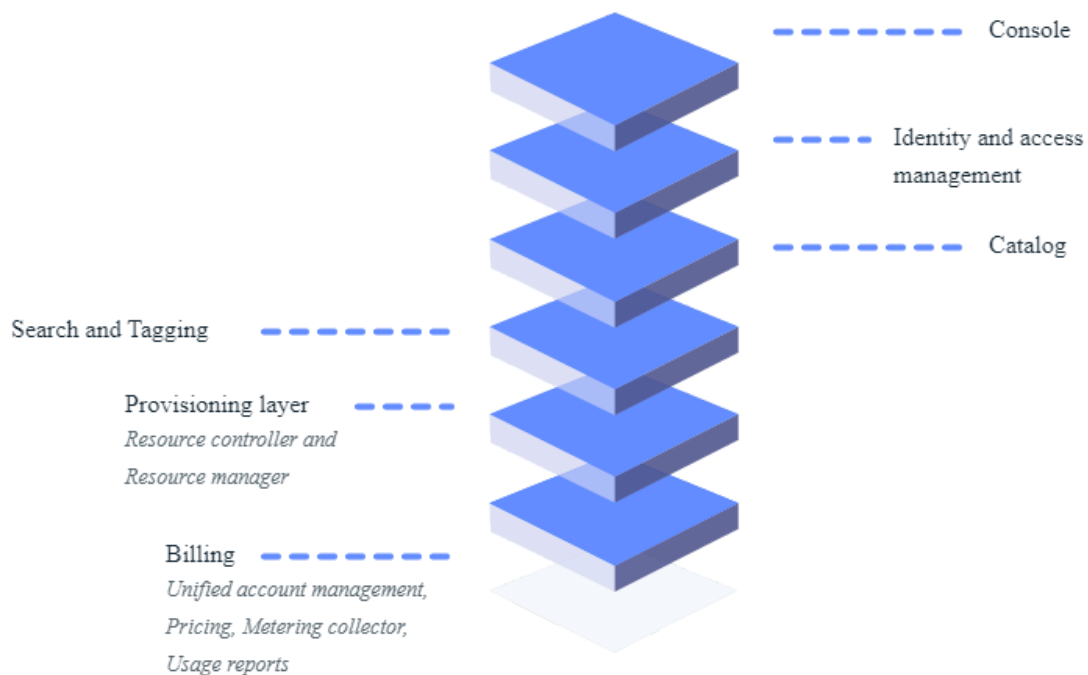
To create an IBM cloud account,
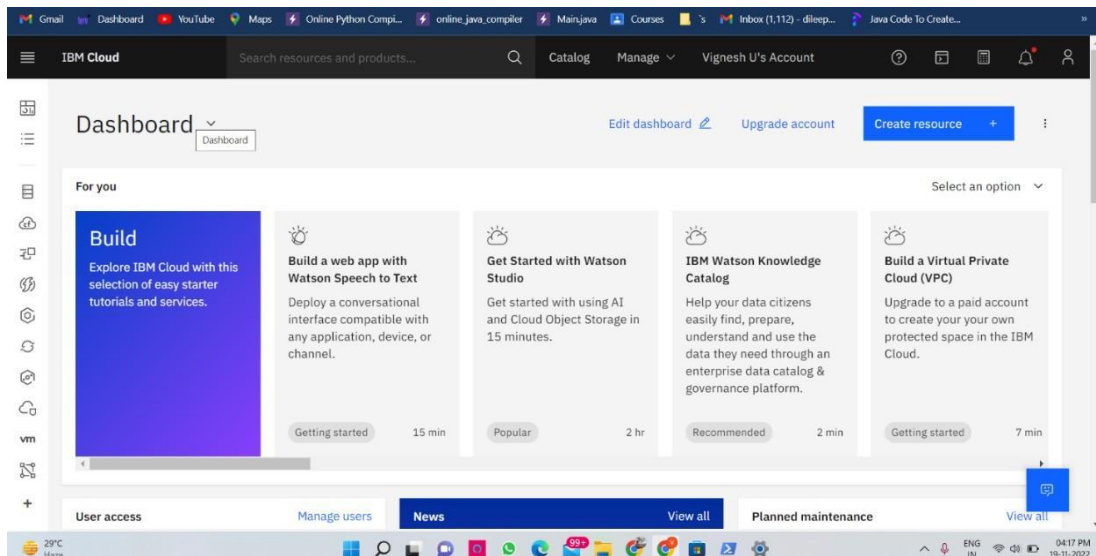
Account details
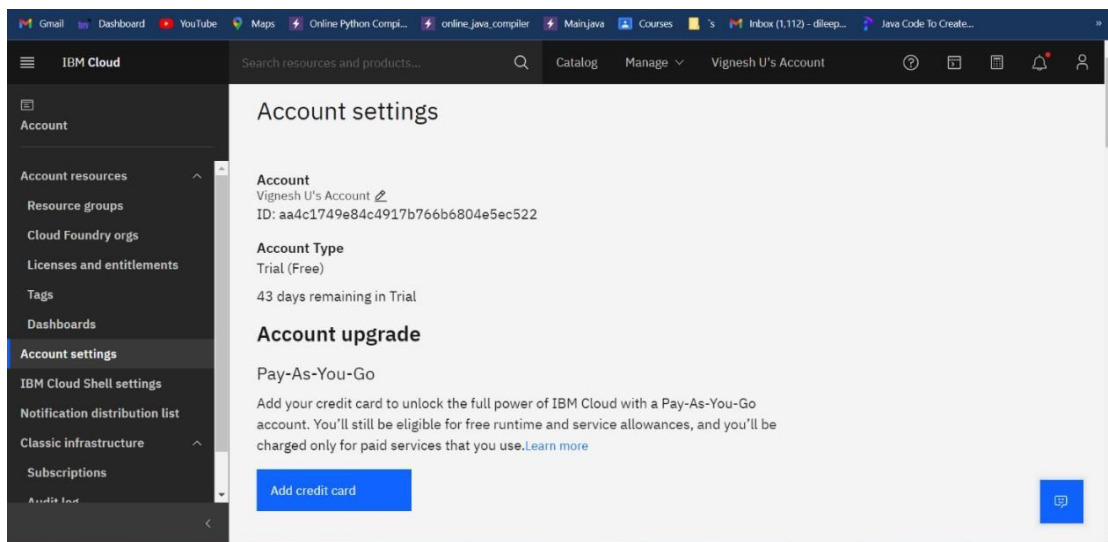
7.2 FLASK FRAMEWORK

Flask is a micro web framework written in Python. It is classified as a microframework 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 or object-relational mappers, form validation, upload handling, various open authentication technologies and several common framework related tools.

To create it,

To check the version : **python --version**

To check the path :   **pip -V**

Flask installation : **py -m install flask**

app.py file in VC code to run it.

7.3 DOCKER CLI

The Docker client enables users to interact with Docker. The Docker client can reside on the same host as the daemon or connect to a daemon on a remote host. A docker client can communicate with more than one daemon. The Docker client provides a command line interface (CLI) that allows you to issue build, run, and stop application commands to a Docker daemon. The main purpose of the Docker Client is to provide a means to direct the pull of images from a registry and to have it run on a Docker host. Common commands issued by a client are:

docker build

docker pull

docker run

For installing,

```
PS C:\WINDOWS\system32> docker --help

Usage:  docker [OPTIONS] COMMAND

A self-sufficient runtime for containers

Options:
      --config string      Location of client config files (default
                           "C:\\Users\\Pavithra\\.docker")
  -c, --context string     Name of the context to use to connect to the
                           daemon (overrides DOCKER_HOST env var and
                           default context set with "docker context use")
  -D, --debug              Enable debug mode
  -H, --host list          Daemon socket(s) to connect to
  -l, --log-level string   Set the logging level
                           ("debug"|"info"|"warn"|"error"|"fatal")
                           (default "info")
      --tls                Use TLS; implied by --tlsverify
      --tlscacert string   Trust certs signed only by this CA (default
                           "C:\\Users\\Pavithra\\.docker\\ca.pem")
      --tlscert string     Path to TLS certificate file (default
                           "C:\\Users\\Pavithra\\.docker\\cert.pem")
      --tlskey string      Path to TLS key file (default
                           "C:\\Users\\Pavithra\\.docker\\key.pem")
      --tlsverify          Use TLS and verify the remote
  -v, --version            Print version information and quit

Management Commands:
  builder     Manage builds
  buildx*     Docker Buildx (Docker Inc., v0.9.1)
  compose*    Docker Compose (Docker Inc., v2.12.2)
  config      Manage Docker configs
  container   Manage containers
  context     Manage contexts
  dev*        Docker Dev Environments (Docker Inc., v0.0.3)
  extension*  Manages Docker extensions (Docker Inc., v0.2.13)
  image       Manage images
  manifest    Manage Docker image manifests and manifest lists
  network     Manage networks
  node        Manage Swarm nodes
  plugin      Manage plugins
  sbom*       View the packaged-based Software Bill Of Materials (SBOM) for an image (Anchore Inc., 0.6.0)
  scan*       Docker Scan (Docker Inc., v0.21.0)
  secret      Manage Docker secrets
  service     Manage services
  stack       Manage Docker stacks
  swarm       Manage Swarm
  system      Manage Docker
  trust       Manage trust on Docker images
```

7.3 IBM CLOUD CLI

IBM Cloud CLI provides full management of your IBM Cloud account via command line. Some installation steps described along this guide may need the IBM Cloud Command Line Interface (CLI) available to be performed.

Authentication of Cloud Account after the installation of Cloud CLI

7.4 SENDGRID API

SendGrid's web API allows users to pull information about their email program without having to actually log on to SendGrid.com. Users can pull lists, statistics, and even email reports. In addition to this, users can send email via the web API without using traditional SMTP.

7.5 KUBERNETES

Kubernetes is an open-source Container Management tool which automates container deployment, container scaling, and descaling and container load balancing (also called as container orchestration tool). It is written in Golang and has a huge community because it was first developed by Google and later donated to CNCF (Cloud Native Computing Foundation). Kubernetes can group 'n' number of containers into one logical unit for managing and deploying them easily. It works brilliantly with all cloud vendors i.e. public, hybrid and on-premises. Kubernetes is an open-source platform that manages Docker containers in the form of a cluster. Along with the automated deployment and scaling of containers, it provides healing by automatically restarting failed containers and rescheduling them when their hosts die. This capability improves the application's availability.

CHAPTER 8

TESTING AND RESULTS

This Chapter presents the results the results of Plasma Donor Application

8.1 TEST CASES

Test case ID	Feature Type	Component	Test Scenario	Pre-Requisite	Steps To Execute	Test Data	Expected Result	Actual Result	Status
1	Functional	Login Page	Verify user is able to Login into the Application		1) Open the Plasma Donor Applicaion 2) Login with user Credentials	Username: Priyanka Password: test	Login Successful	Working as expected	Pass
2	Functional	Signup Page	Verify user is able to Signup in the Application		1) Open the Plasma Donor Applicaion 2) Enter the Details and Create a new User 3) Verify if user is created and	Username: Ayshu Password: test Name: Ayshu DOB: 12/9/2001 Password: test	Account Created Successfully	Working as expected	Pass
3	Functional	Personal Details page	Verify if all the user details are stored in Database		1) Open the Plasma Donor Applicaion 2) Enter the Details and Create a new User 3) Verify if user is created and	Username: chalam@gmail.com password: Testing123	User should navigate to user account homepage		
4	Functional	Login page	Verify user is able to log into application with InValid credentials		1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter InValid usemame/email in Email text box 4.Enter valid password in password	Username: chalam@gmail password: Testing123	Application should show 'Incorrect email or password ' validation message.		
5	Functional	Login page	Verify user is able to log into application with InValid credentials		1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter Valid username/email in Email text box	Username: chalam@gmail.com password: Testing12367868678687 6876	Application should show 'Incorrect email or password ' validation message.		

Test Scenarios

8.1.1   Verify user is able to see login page

8.1.2   Verify user is able to login to application or not?

8.1.3   Verify user is able to navigate to create your account page?

8.1.4   Verify user is able to recovery password

8.1.5   Verify login page elements
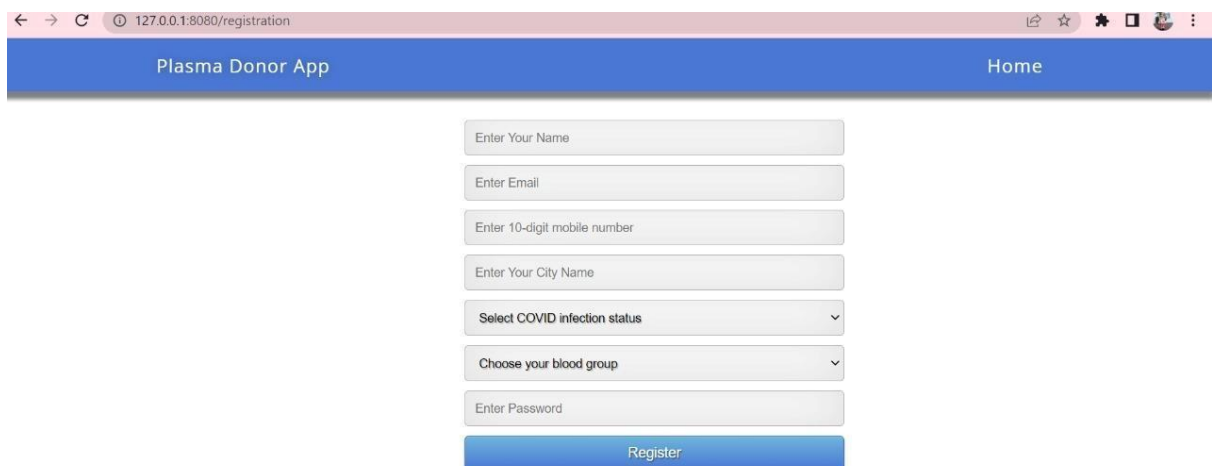
Feature 1- Login with user credentials

Feature 2- Register for Plasma donation
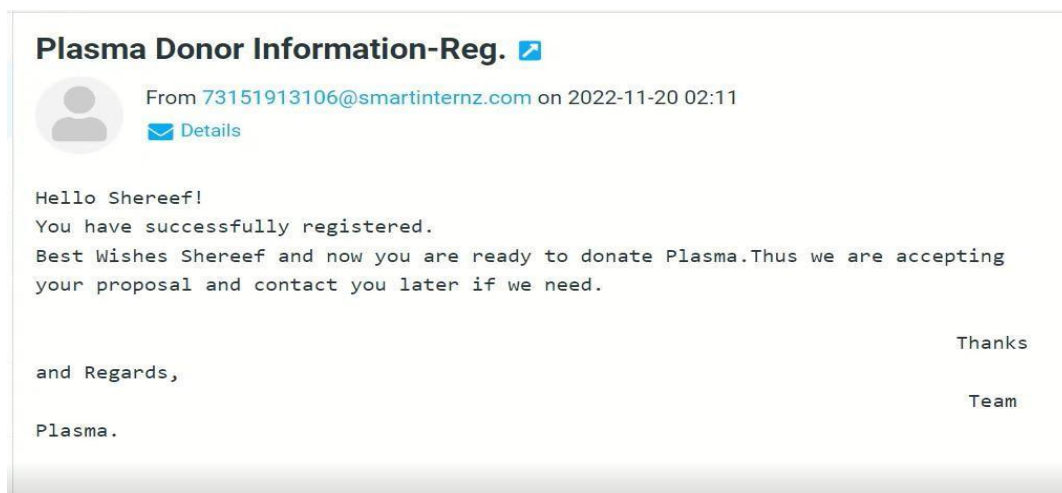
Feature 3- Reply via e-mail to the user/ Authentication of an e-mail

Plasma Donor Information-Reg. ↗

From 73151913106@smartinternz.com on 2022-11-20 02:11
✉ Details

Hello Shereef!
You have successfully registered.
Best Wishes Shereef and now you are ready to donate Plasma.Thus we are accepting
your proposal and contact you later if we need.

Thanks

and Regards,

Team

Plasma.

Feature 4- Returning of home page
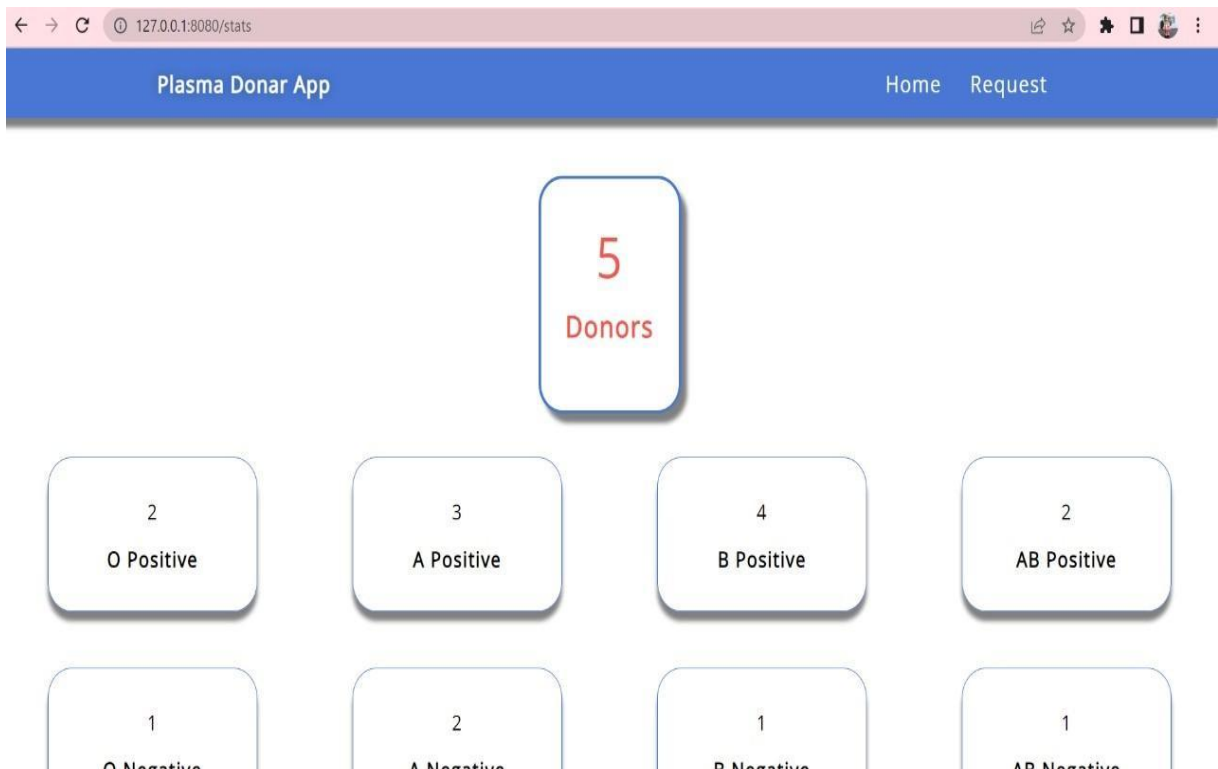
Feature 5- Request page with blood type and location

Search

1. Verify user is able to search by entering keywords in search box
2. Verify user is able to see suggestions based on keyword entered in search box
3. Verify user is able to see related auto suggestions displaying based on keyword entered in search box
4. Verify user is able to see no matches found message when no results are matching with entered keyword
5. Verify user is able to see search detailed page when nothing entered in textbox

8.2   USER ACCEPTANCE TESTING

1.   Purpose of Document

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

2.   Defect Analysis

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

CHAPTER 9

PERFORMANCE RESULTS

9.1   PERFORMANCE METRICS

Test case ID	Feature Type	Component	Test Scenario	Pre-Requisite	Steps To Execute	Test Data	Expected Result	Actual Result	Status
1	Functional	Login Page	Verify user is able to Login into the Application		1) Open the Plasma Donor Applicaion 2) Login with user Credentials	Username: Priyanka Password: test	Login Successful	Working as expected	Pass
2	Functional	Signup Page	Verify user is able to Signup in the Application		1) Open the Plasma Donor Applicaion 2) Enter the Details and Create a new User 3) Verify if user is created and	Username: Ayshu Password: test Name: Ayshu DOB: 12/9/2001 Password: test	Account Created Successfully	Working as expected	Pass
3	Functional	Personal Details page	Verify if all the user details are stored in Database		1) Open the Plasma Donor Applicaion 2) Enter the Details and Create a new User 3) Verify if user is created and	Username: chalam@gmail.com password: Testing123	User should navigate to user account homepage		
4	Functional	Login page	Verify user is able to log into application with InValid credentials		1. Enter URL(https://shopenzer.com/) and click go 2. Click on My Account dropdown button 3. Enter InValid username/email in Email text box 4. Enter valid password in password	Username: chalam@gmail password: Testing123	Application should show 'Incorrect email or password ' validation message.		
5	Functional	Login page	Verify user is able to log into application with InValid credentials		1. Enter URL(https://shopenzer.com/) and click go 2. Click on My Account dropdown button 3. Enter Valid username/email in Email text box	Username: chalam@gmail.com password: Testing123678686786876	Application should show 'Incorrect email or password ' validation message.		

CHAPTER 10
ADVANTAGES & DISADVANTAGES

10.1   ADVANTAGES

The project is identified by the merits of the system offered to the user. The merits of this project are as follows; -

- It's a web-enabled project.

- This project offers user to enter the data through simple and interactive forms. This is very helpful for the client to enter the desired information through so much simplicity.

- The user is mainly more concerned about the validity of the data, whatever he is entering. There are checks on every stages of any new creation, data entry or updation so that the user cannot enter the invalid data, which can create problems at later date.

- Sometimes the user finds in the later stages of using project that he needs to update some of the information that he entered earlier. There are options for him by which he can update the records. Moreover there is restriction for his that he cannot change the primary data field. This keeps the validity of the data to longer e0tent.

- User is provided the option of monitoring the records he entered earlier. He can see the desired records with the variety of options provided by him.

- From every part of the project the user is provided with the links through framing so that he can go from one option of the project to other as per the requirement. This is bound to be simple and very friendly as per the user is concerned. That is" we can sat that the project is user friendly which is one of the primary concerns of any good project.

- Data storage and retrieval will become faster and easier to maintain because data is stored in a systematic manner and in a single database.

- Decision making process would be greatly enhanced because of faster processing of information since data collection from information available on computer takes much less time then manual system.

- Allocating of sample results becomes much faster because at a time the user can see the records of last years.

- Easier and faster data transfer through latest technology associated with the computer and communication.

● Through these features it will increase the efficiency, accuracy and transparency

.

10.2   DISADVANTAGES

● Wrong inputs will affect the project outputs.

● Internet Connection is mandatory.

● Reports are not Verified

CHAPTER 11

CONCLUSION

This project proved good for me as it provided practical knowledge of not only programming in ASP.NET and VB.NET web based application and no some extent windows Application and SQL Server, but also about all handling procedure related with "Plasma Donor Application". It also provides knowledge about the latest technology used in developing web enabled application and client server technology that will be great demand in future. This will provide better opportunities and guidance in future in developing projects independently.

CHAPTER 12

FUTURE

SCOPE

Plasma Donor Application is a web application to build such a way that it should suits for all type of blood banks in future. 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. All the time the network facilities cannot be use. This time donor request does not reach in proper time, this can be avoided through adding some message sending procedure this will help to find proper blood donor in time. This will provide availability of blood in time.

APPENDIX:

SOURCE CODE

```python
from flask import Flask, render_template, request, redirect, url_for,
session import ibm_db
import json
app = Flask(_name_)
conn      =      ibm_db.connect("DATABASE=bludb;HOSTNAME=fbd88901-ebdb-4a4f-
a32e9822b9fb237b.c1ogj3sd0tgtu0lqde00.databases.appdomain.cloud;PORT=32731;SECURI
TY=SSL;SSLServerCertificate=DigiCertGlobalRootCA.crt;UID=hjq91894;PWD=y0CHaaerS
4x2BfmR","","")
@app.route('/registration'
) def home():
    return render_template('register.html')
@app.route('/register',methods=['POST'])
def register():
    x = [x for x in
    request.form.values()] print(x)
    name=x[0]
    email=x[1]
    phone=x[2]
    city=x[3]
    infect=x[4]
    blood=x[5]
    password=x[6
    ]
    sql = "SELECT * FROM user WHERE email
    =?" stmt = ibm_db.prepare(conn, sql)
    ibm_db.bind_param(stmt,1,email)
    ibm_db.execute(stmt)
    account =
    ibm_db.fetch_assoc(stmt)
```

```
print(account)
if account
```

```python
        return render_template('register.html', pred="You are already a member, please login using your details")
            else:

                insert_sql = "INSERT INTO user VALUES (?, ?, ?, ?, ?, ?, ?)"

                prep_stmt = ibm_db.prepare(conn,

                insert_sql) ibm_db.bind_param(prep_stmt, 1,

                name)

                ibm_db.bind_param(prep_stmt, 2, email)

                ibm_db.bind_param(prep_stmt, 3, phone)

                ibm_db.bind_param(prep_stmt, 4, city)

                ibm_db.bind_param(prep_stmt, 5, infect)

                ibm_db.bind_param(prep_stmt, 6, blood)

                ibm_db.bind_param(prep_stmt, 7,

                password) ibm_db.execute(prep_stmt)

                return render_template('register.html', pred="Registration Successful, please login using

            your details")

            @app.route('/')

            @app.route('/login'

            ) def login():

                return render_template('login.html')

            @app.route('/loginpage',methods=['POST']

            ) def loginpage():

                user = request.form['user']

                passw =

                request.form['passw']

                sql = "SELECT * FROM user WHERE email =? AND

                password=?" stmt = ibm_db.prepare(conn, sql)

                ibm_db.bind_param(stmt,1,user)

                ibm_db.bind_param(stmt,2,passw

                ) ibm_db.execute(stmt)

                account =

                ibm_db.fetch_assoc(stmt) print

                (account)

                print(user,passw)
```

```
if account:
```

```python
            return redirect(url_for('stats'))
    else:
        return render_template('login.html', pred="Login unsuccessful. Incorrect username /
password !")
@app.route('/stats'
) def stats():
    '''sql = "SELECT blood FROM user group by blood"
    stmt = ibm_db.prepare(conn, sql)
    ibm_db.execute(stmt)
    count = ibm_db.fetch_assoc(stmt)
    print(count)'''
    return
render_template('stats.html',b=5,b1=2,b2=3,b3=4,b4=2,b5=1,b6=2,b7=1,b8=1)
@app.route('/requester')
def requester():
    return render_template('request.html')
@app.route('/requested',methods=['POST']
) def requested():
    bloodgrp = request.form['bloodgrp']
    address = request.form['address']
    print(address)
    sql = "SELECT * FROM user WHERE
    blood=?" stmt = ibm_db.prepare(conn, sql)
    ibm_db.bind_param(stmt,1,bloodgrp)
    ibm_db.execute(stmt)
    data = ibm_db.fetch_assoc(stmt)
    msg = "Need Plasma of your blood group for: "+address
    while data != False:
        print ("The Phone is : ", data["PHONE"])
url="https://www.fast2sms.com/dev/bulk?authorization=xCXuwWTzyjOD2ARd1EngbH3a7t
KIq5PklJ8YSf0Lh4FQZecs9iNI1dSvuqprxFwCKYJXA5amQkBE36Rl&sender_id=FSTSM
S &message="+msg+"&language=english&route=p&numbers="+str(data["PHONE"])
        result=requests.request("GET",url)
```

```
        print(result)

        data = ibm_db.fetch_assoc(stmt)

    return render_template('request.html', pred="Your request is sent to the concerned people.")
if __name__== "_main_":

    app.run(host='0.0.0.0', port=8080)
```

For accesing SendGrid mail access,

```
import os

from dotenv import

load_dotenv load_dotenv()

from sendgrid import

SendGridAPIClient from

sendgrid.helpers.mail import Mail

def sendmail(usermail,subject,name,content):

message                                                                                      =
Mail(from_email='73151913106@smartinternz.com',to_emails=usermail,subject='Plasma
donor-reg.',html_content='<h4>Hello {}, </h4><br/><strong> {} </strong><br/><p>Best
Wishes and Welcome to donate plasma. We are accepting the proposal.
Thank you!,</p><p>Team Plasma</p>'.format(name,content))

    try:

      sg =

      SendGridAPIClient(os.getenv('API_KEY'))

      response = sg.send(message)

      print(response.status_code)

      print(response.body)

      print(response.headers

      ) except Exception as
```

e: print(e.message)

GITHUB LINK:

https://github.com/IBM-EPBL/IBM-Project-47885-1660803058

DEMO VIDEO LINK:

https://drive.google.com/file/d/1WeWCRn7vCJH0xCXMqGnHgTBq2e4fDrTH/view?usp=sharing

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