PLASMA DONAR APPLICATION

A PROJECT REPORT

Submitted by

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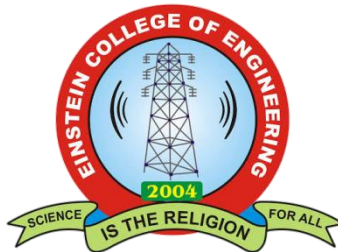S .SUDALAI RAJ   (Team Member)   (950619106304)

TEAM ID PNT2022TMID49935

HX8001 PROFESSIONAL READYINESS FOR INNOVATION EMPLOYABLITY AND ENTREPRENEURSHIP

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EINSTEIN COLLEGE OF ENGINEERING, TIRUNELVELI-627 012

ANNA UNIVERSITY: CHENNAI 600 025

NOVEMBER: 2022

BONAFIED CERTIFICATE

Certified this report "PLASMA DONAR APPLICATION", for the project, is the bonafied work of "**R.SELVA MAYIL VENGADESH (TEAM MEMBER) (950619106024), J.VIGNESH (TEAM LEADER), (950619106029), L.VISHNU PASATH(TEAM MEMBER)(950619106030),S.SUDALAI RAJ(TEAM MEMBER)(950619106304)"** who carried out the project work under my supervision. Certified further that to the best of my knowledge the work reported here does not form part of any other thesis or dissertation of any other candidate.

SIGNATURE   **SIGNATURE**

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HOD/ECE   **MENTOR**

EVALUATOR   **SPOC**

Mrs. T. Viji   **Mr.S.ARUNSINGH**

Asst.prof/ECE   **Asst.prof/ECE**

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ABSTRACT

"Plasma" one of the most important necessity of our life. The numbers of Plasma donor is very less when compared with other countries. In our project we propose a new and efficient way to overcome such outline. Such as just touch the button donor will be ask to enter an individual's details like name, phone number, age, weight, date of birth, blood group, address etc. At the emergency time of plasma needed we can check for plasma donor nearby by using GPS. Once the app user enter the blood group which he/she needed it will automatically show the donor nearby and send an alert message to the donor. In case if the first donor is not available it will automatically search the next donor which is present in queue. If the donor accept the request then an one time password (OTP) will be send to the donor to verify. Plasma donation app provider list of donor in your city/area. Once the donor donate the plasma it will automatically remove the donor detail for next three months.

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CHAPTER 1

INTRODUCTION

Finding ways to recruit apheresis donors is crucial. The aim of this study was to provide a quantitative analysis of the motivations of regular plasma/platelets donors (PPDs) in comparison with those of regular whole blood donors (WBDs), in a voluntary and non-remunerated context. Study Design and Methods . Motives to donate blood and demographic. first question concerned motivators for blood donation. Several sources were used in selecting and formulating the proposed answer choices.

In order to select answer choices for the present survey, we also reviewed the survey tools used by other researchers to study blood donation motivators, as well as of the results pre- sented in 24 separate studies. Some statements-"someone close to me has received one or more blood transfusions in the past," "it is my civic duty/a way to help out the community," "I think there is a strong need for blood products"-have figured in a large number of studies.

1.1 Project Overview

The Plasma Donation Agent is to create an e-Information about the donor and organization that are related to donating the plasma. Through this application any person who is interested in donating the Plasma 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 Plasma 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

The main purpose for preparing this document is to give a general insight into the analysis and requirements of the existing system or situation and for determining the operating characteristics of the system.

CHAPTER 2

LITERATURE SURVEY

The major contribution of Human Sciences in the understanding of the whole Plasma donation behavior has been through the study of individuals' motivations and deterrents to donate. However, if whole Plasma donation has been very widely studied in the last sixty years, we still know very little about plasma donation in voluntary non-remunerated environments. Yet, the need for plasma-derived products has been strongly increasing for some years, and blood collection agencies have to adapt if they want to meet this demand. This article aims to review the main motivations and deterrents to whole blood donation, and to compare them with those that we already know concerning plasma donation. Current evidence shows similarities between both behaviors, but also differences that indicate a need for further research regarding plasma donation.

2.1 Existing problem

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

2.2 References

1.Kelly Holloway: To address a national concern over the sufficiency of plasma, Canadian Blood Services (CBS) initiated a proof-of-concept programme with three new source plasma collection centres, aiming to demonstrate a cost-effective template for future source plasma collection and to alleviate the concerns and risks associated with the dependence on the United States. This study uses social capital as a framework to assess the success of the proof-of-concept collection centres. Materials and methods: One-

hundred and one qualitative interviews with source plasma donors in three new source plasma centres in Canada were carried out. Results: CBS played a critical role in motivating whole-blood donors to switch to plasma donation by building on their identity as a donor and facilitating access. Community was central to ensuring that donors returned. The importance of the social network was apparent through relationships participants developed with staff and through the relationships that staff had with each other. Donors wanted to understand more about the uses of plasma so that they could promote donation through their social networks outside the centre. Conclusion: Campaigns to convert existing blood donors to plasma donors should build on their identity as a donor and structure the centre as a safe and welcoming place. To retain donors, blood collection agencies should emphasize community by facilitating staff ability to work well together and connect with the donor.

2. Ali Abbasian-Hossein: Literature on plasma donation in a voluntary non-remunerated setting has assessed motivations and deterrents for plasma donation, indicating that plasma donors want to help others or save lives and are motivated by the blood collection agencies' (BCAs') need for plasma. Plasma can be donated more frequently than whole blood, which facilitates a routine and relationships with staff.

3. Gregory Howell:

Regular plasma donors work to fit donation into their lives. Given the need for plasma, there has been some scholarship measuring BCAs' efforts to convert donors from whole blood to plasma donors and retain them as ongoing donors. BCAs are encouraged to build retention through providing social and informational support and structuring the donation process to encourage interpersonal relationships.

4. Antony beurel: For decades, the involvement of populations in blood donation has been a major health issue in the world. In recent years, the sharp increase in the need for plasma-derived products has made it difficult for non- remunerated collection systems, such as the French Blood Establishment, to ensure national self-sufficiency. This thesis aims to mobilize knowledge and techniques from the human and social sciences, more specifically from social psychology, to develop

applied solutions to better convert blood donors to plasma donation. To do this, we carried out three studies during which the motivations and barriers to plasma donation of blood donors were evaluated. An intervention built around the theory of planned behavior and the implementation of intentions was tested in the following two experiments. The objective of this intervention was to reduce barriers to donation, increase the intention to donate, and promote conversion to plasma donation.

5. Petra gyuris:

Blood donation is considered as one of the purest forms of altruism. Plasma donation, in contrast, despite being a similar process, is mostly a paid activity in which donors are compensated for their contribution to the production of therapeutic preparations. This creates a so-called "plasma paradox:" If remuneration is promised for a socially useful effort, volunteers with altruistic motives might be deterred. At the same time, regular plasma donors who pursue the monetary benefits of donation might drop out if remuneration stops. The same controversy can be caught in the messages of most plasma donation companies as well: They promise a monetary reward (MR), and at the same time, highlight the altruistic component of donation. In this study, we tested the assumption that emphasizing the social significance enhances the willingness to

donate blood plasma more effectively than either MR or the combination of these two incentives. This had to be rejected since there was no significant difference between the three scenarios. Furthermore, we also hypothesized that individuals might be more motivated to donate plasma if there is a possibility of offering an MR toward other socially beneficial aims.

6. Olga Ciepiela:

Transfusion of blood-derived products is often used as a life-saving treatment, and being a blood donor should be common, especially among medical professionals. Thus, an awareness of one's own blood type in medical students should be common. Our aim was to assess if students of the Medical University of Warsaw know their blood type and how many of them are registered blood donors. Material and methods: A survey was conducted in a group of 1121 students. The survey included questions addressing awareness of the students' blood type, the frequency

of blood types in Poland, being a blood donor, and willingness to become a blood donor. Results: Of all students, 86.8% knew their blood type and 13.2% did not. Approximately 30.2% of students in the survey declared that they are blood donors, 57.9% had only considered becoming a blood donor and 11.9% had not even considered becoming a blood donor**.**

7. johanne Charbonneau:

The demand for therapeutic plasma-derived products poses a challenge to blood collection agencies (BCAs). In 2014-2015, the volume of plasma sent for fractionation met 17.7% of Quebec's needs for immunoglobulins. This article aims to offer an exploration of the paths blood donors follow in order to become plasma and platelet donors . Study design and method: This analysis is based on semi-structured interviews with 50 PPDs in Quebec, Canada. Our analysis focused on the occurrence of events and

the presence of contextual elements identified through: factual data on PPDs; and what PPDs identified as being an influence on their donation experience. This information was synthesized using a typology of trajectories. Results: Six typical trajectories have been distinguished, first by the presence or absence of blood donation as a family tradition. Of the latter 31 donors, some pointed instead to inherited family values as having a significant influence on their commitment .Donors' careers were then distinguished as having started early or late. Sub-types then appeared with the addition of other contextual elements, motivation profiles, and circumstances under which the conversion to apheresis donation occurred

CHAPTER 3

IDEATION & PROPOSED SOLUTION

In this Phase the Planning and Project designing of the application were performed. The Ideation and Proposed solution performs, How the Customer got problems and how they overcome the problems were analyzed.

3.1 Empathy Map Canvas

An empathy map is a collaborative tool teams can use to gain a deeper insight into their customers. Much like a user persona, an empathy map can represent a group of users, such as a customer segment. The empathy map was originally created by Dave Gray and has gained much popularity within the agile community

Fig:Empathy Map Canavas(3.1.1)
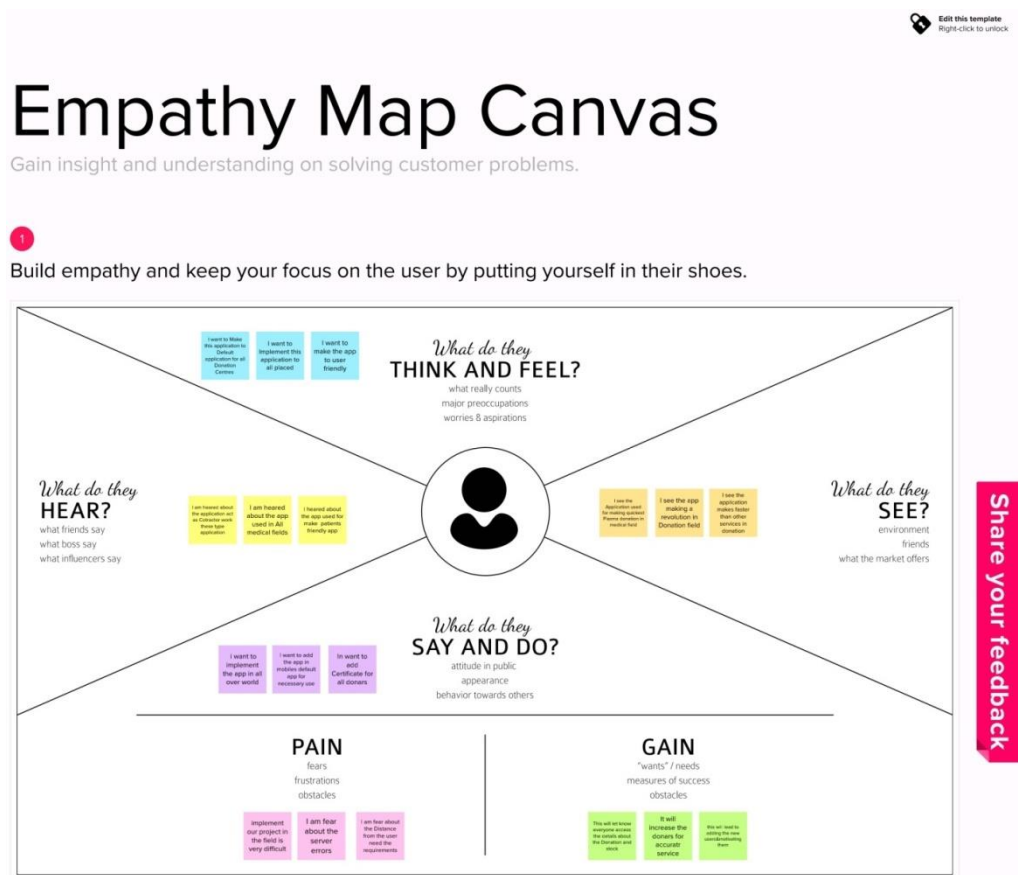
3.2 Ideation & Brainstorming

Brainstorming is a group problem-solving method that involves the spontaneous contribution of creative ideas and solutions. This technique requires intensive, freewheeling discussion in which every member of the group is encouraged to think aloud and suggest as many ideas as possible based on their diverse knowledge.
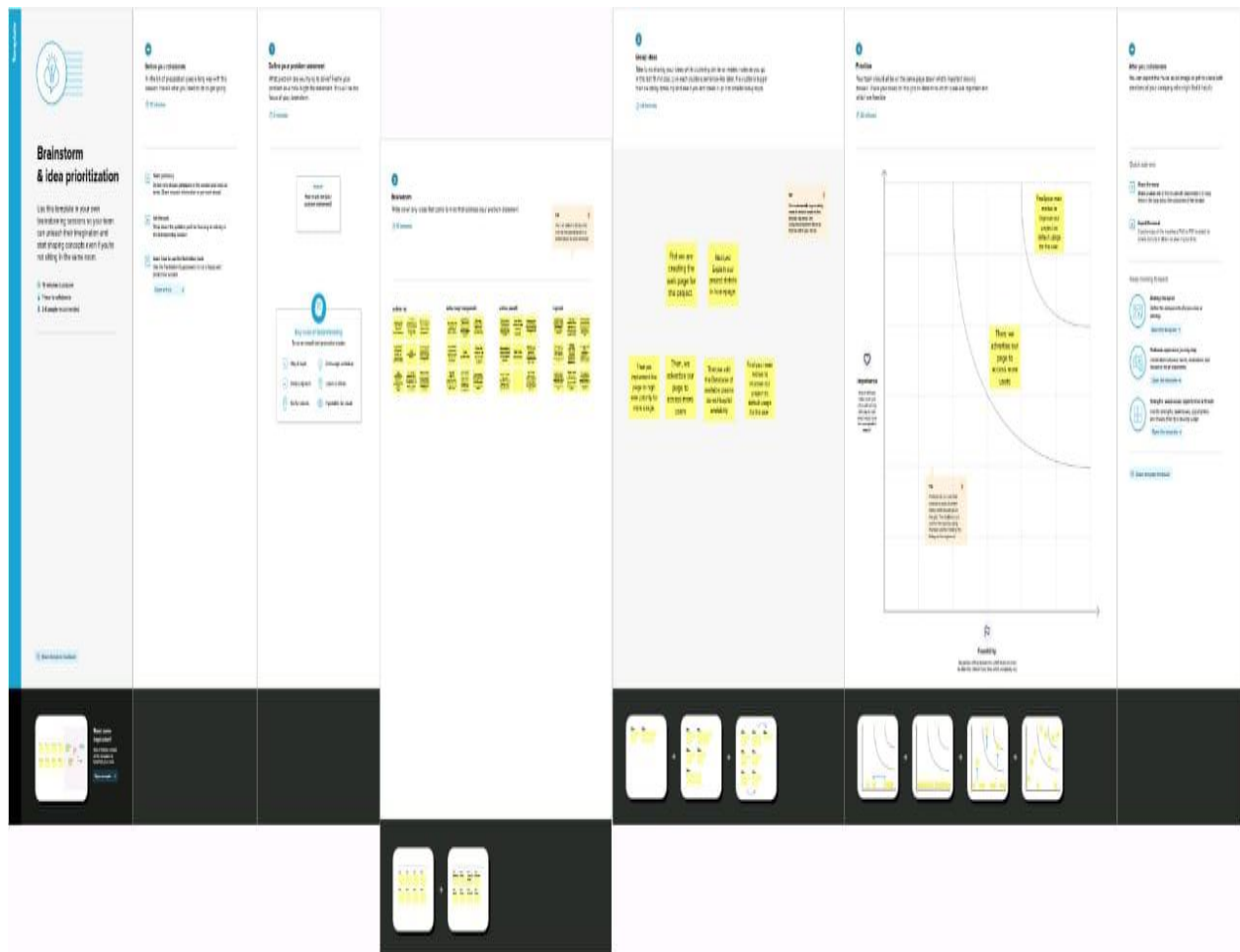

Fig:Brain Storming(3.2.2)

3.3 Proposed Solution

Your proposed solution should relate the current situation to a desired result and describe the benefits that will accrue when the desired result is achieved. So, begin your proposed solution by briefly describing this desired result.

Proposed Solution:

S.No	Parameter	Description
1	Problem statement(problem to be solved)	User wants to keep their Profile as private,Then the user will not use for emergency time.
2	Idea / Solution description	We planned for updating the application without adding the profile method. This will not able to analyse the donar.
3	Novelty / Uniqueness	We are not like zomato , pharmeasy. We just store and share the information about the donar available area,unit.
4	Social Impact / Customer Satisfaction	This will create a huge impact in up-normal period,easy to recognise the Donar location within a minute.
5	Business Model (Revenue Model)	"The Customer and Owner are our Customers" Because the Donar(customer) can sell his plasma in Application,and another customer can buy this.
6	Scalability of the Solution	The solution were definitely make a difference if the user need the privacy.

(Table: Proposed solution 3.3.1)

3.4 Problem Solution fit

CUSTOMER STATE FIT: To explore our product to customer, What can we make for them, and how it suitable for them.

CUSTOMER LIMITATIONS: The application provides the details about the plasma donars available nearer to them, if the user distance from the donar, the plasma will not provided to them.

AVAILABLE SOLUTION:To solve the Distance maintenances problem,Only one solution is there, Which is,To create and implement our Application to all over india.

PROBLEMS & PAINS:The main problem for the application is to maintain the user level.because the donars only applied for the donation,if every user register in this app.there will be a problem occurs

SOLUTION GUESS:We planned to implement our applications in all Hospitals and medical colleges.This will let know about the uses of the application

HOW WE DIFFER FROM OTHERS:We planned to give an ads on every user friendly apps, News papers Giving awareness to all patients.

WHO IS YOUR CUSTOMER: Patients, Plasma donars are our customers

LIMITATIONS TO BUY : This is not a certain need in all peoples life, so there is no limitations.

Communication Barrier: There will creating the server will be difficult and maintanence will be lagging.

CHAPTER 4

REQUIREMENT ANALYSIS

A solution requirement is aimed at the concerns of the people who will build and deliver the solution. It tells those people what the functional and non-functional requirements for the solution will be and how the solution will deliver on the business and stakeholder requirements.

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 Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User Profile	Confirmation via Aadhar
FR-4	User Body Condition	Confirmation via Doctor consulting Receipt

(Table Functional requirements 4.1.1)

4.2 Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Our product used for finding quick plasma donar availability
NFR-2	**Security**	Application Is more secure because of high security database
NFR-3	**Reliability**	User can feel free to upload their profile.
NFR-4	**Performance**	Application can move the donation field to next level
NFR-5	**Availability**	User can easily Download it on Google Play Store
NFR-6	**Scalability**	This application not force user to must use, because it can only use for patients, so it can not compare to other applications.

Table:Non-functional Requiements 4.2.2

CHAPTER 5

PROJECT DESIGN

Project design is an early phase of the project lifecycle where ideas, processes, resources, and deliverables are planned out. A project design comes before a project plan as it's a broad overview whereas a project plan includes more detailed information

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.
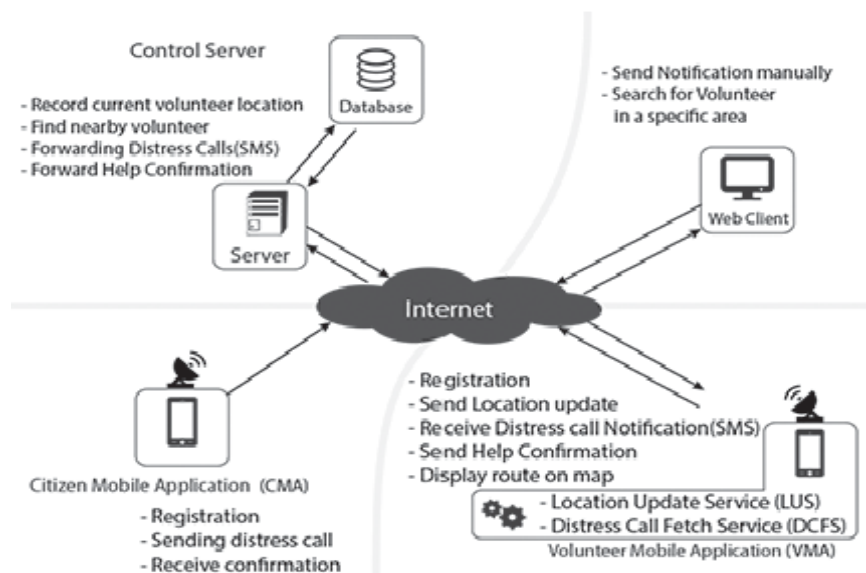

Fig 5.1.1 Data Flow Diagrams

A data flow diagram is graphical tool used to describe and analyze movement of data through a system. These are the central tool and the basis from

which the other components are developed. The transformation of data from input to output, through processed, may be described logically and independently of physical components associated with the system. These are known as the logical data flow diagrams.

The physical data flow diagrams show the actual implements and movement of data between people, departments and workstations. A full description of a system actually consists of a set of data flow diagrams. Using two familiar notations Yourdon, Gane and Sarson notation develops the data flow diagrams. Each component in a DFD is labeled with a descriptive name. Process is further identified with a number that will be used for identification purpose.

The development of DFD'S is done in several levels. Each process in lower level diagrams can be broken down into a more detailed DFD in the next level. The lop-level diagram is often called context diagram. It consists a single process bit, which plays vital role in studying the current system. The process in the context level diagram is exploded into other process at the first level DFD.

The idea behind the explosion of a process into more process is that understanding at one level of detail is exploded into greater detail at the next level. This is done until further explosion is necessary and an adequate amount of detail is described for analyst to understand the process.

Larry Constantine first developed the DFD as a way of expressing system requirements in a graphical from, this lead to the modular design.

A DFD is also known as a "bubble Chart" has the purpose of clarifying system requirements and identifying major transformations that will become programs in system design. So it is the starting point of the design to the lowest

level of detail. A DFD consists of a series of bubbles joined by data flows in the system.

5.2 Solution & Technical Architecture

A solution architecture (SA) is an architectural description of a specific solution. SAs combine guidance from different enterprise architecture viewpoints (business, information and technical), as well as from the enterprise solution architecture (ESA).

The solution architecture helps ensure that a new system will fit the existing enterprise environment. To perform this task, a solution architect has to understand how all parts of the business model work together including processes, operating systems, and application architectures

Design solutions that mesh ideally with an enterprise environment. Recommend best practices for the entire solution. Comply with all technical and business requirements. Scrutinize project constraints to analyze alternatives, mitigate risks, and conduct process re-engineering as necessary.

Based on the complexity of the deployment, a solution architecture diagram may actually be a set of diagrams documenting various levels of the architecture. The diagram relates the information that you gather on the environment to both physical and logical choices for your architecture in an easily understood manner.

Solution Architects are most similar to project managers, ensuring that all parties, including stakeholders, are on the same page and moving in the right direction at all stages. Technical architects manage all activities leading to the successful implementation of a new application.
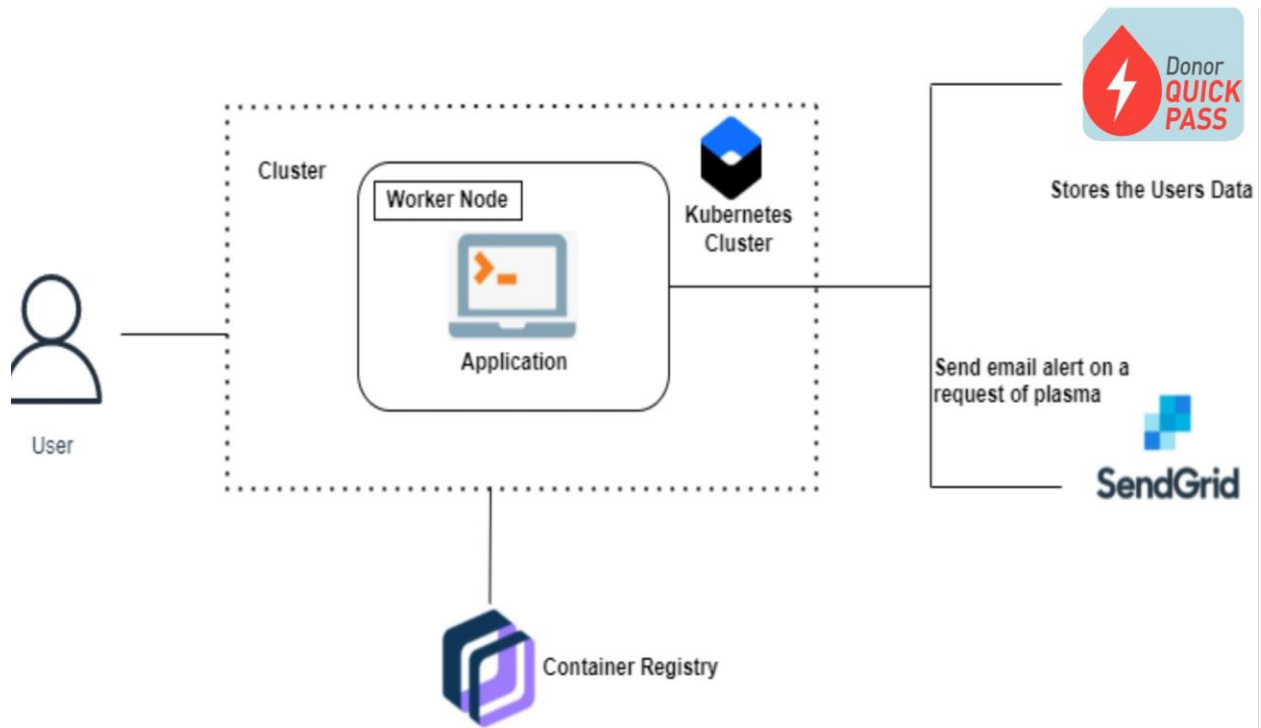
Fig Technical Architecture 5.2.1

Based on the complexity of the deployment, a solution architecture diagram may actually be a set of diagrams documenting various levels of the architecture. The diagram relates the information that you gather on the environment to both physical and logical choices for your architecture in an easily understood manner.

Flow Chart:
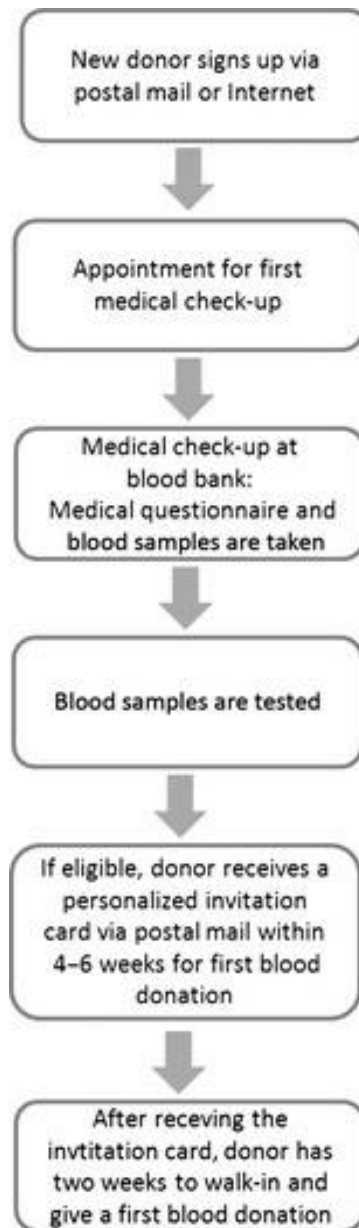
Fig Flow chart5.2.2

During the COVID 19 crisis, the requirement of plasma became high and the donor count being low. Saving the donor information and helping the need by

notifying the current donors would be a helping hand. In regard to the problem faced, an application is to be built which would take the donor details store it and inform them upon a request.

5.3 User Stories

A user story is an informal, general explanation of a software feature written from the perspective of the end user or customer. The purpose of a user story is to articulate how a piece of work will deliver a particular value back to the customer.
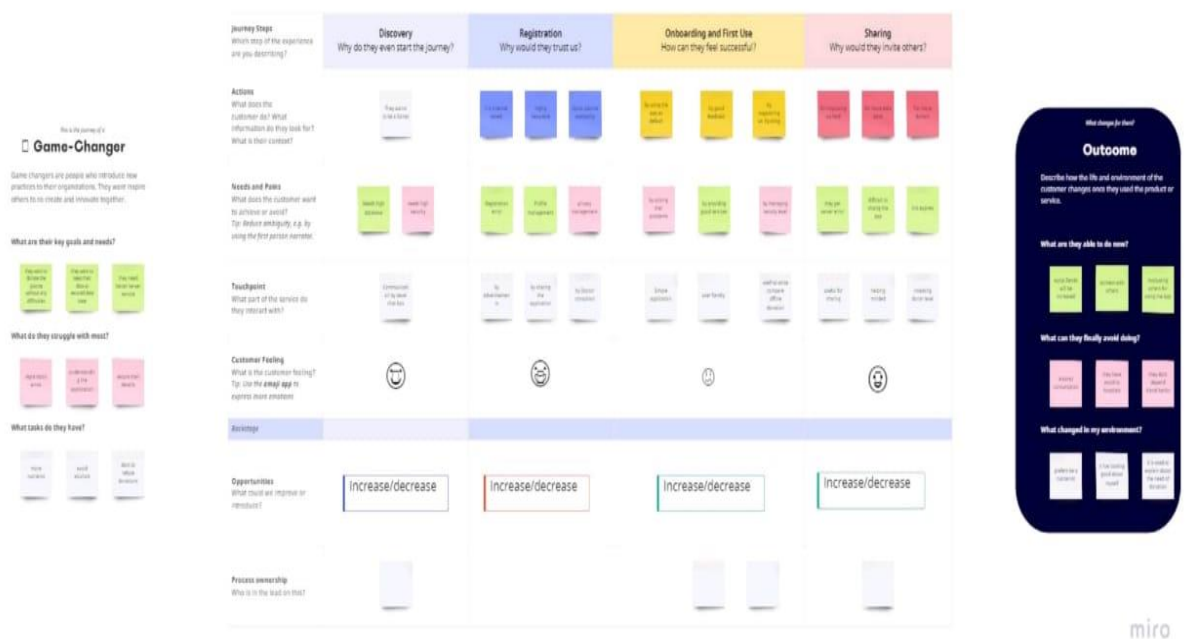
Fig User stories 5.3.1

CHAPTER 6

PROJECT PLANNING & SCHEDULING

Project design is an early phase of the project lifecycle where ideas, processes, resources, and deliverables are planned out. A project design comes before a project plan as it's a broad overview whereas a project plan includes more detailed information.

6.1. Sprint Planning & Estimation

S.NO	ACTIVITY TITLE	ACTIVITY DESCRIPTION	DURATION
1	Project preparation	Assign team members,Create repository in the GitHub, download rocket-chat essentialsand join respective project channel.	1 WEEK
2	Attend class	Attend sessions on IBM, team leader assign task to each member of the project,attend quiz , submit assignment.	1 WEEK
3	Working on different phases of project	Ideation phase-literature survey, Project design phase I-proposed solution,solution architecture,project design phaseII-customer journey ,data flow ,technical architecture,planning phase-milestones,tasks,sprint schedule.	4 WEEK
4	Developing project	Develop the code,test and push it to GitHub,clarify queries.	2 WEEK
5	Budget and scope of project	Analyze andmaking the projectbudget and discuss with team for budget prediction .	1 WEEK

Table Sprint planning and estimation 6.1.1

6.2 Sprint Delivery Schedule

Sprint	Total Story point	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Point Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	26 Oct 2022	31 Oct 2022	20	31 Oct 2022
Sprint-2	20	6 Days	1 Nov 2022	6 Nov 2022	20	6 Nov 2022
Sprint-3	20	6 Days	7 Nov 2022	12 Nov 2022	20	12 Nov 2022
Sprint-4	20	6 Days	13 Nov 2022	18 Nov 2022	20	18 Nov 2022

Table Sprint Delivery schedule 6.2.1

6.3.Reports from JIRA
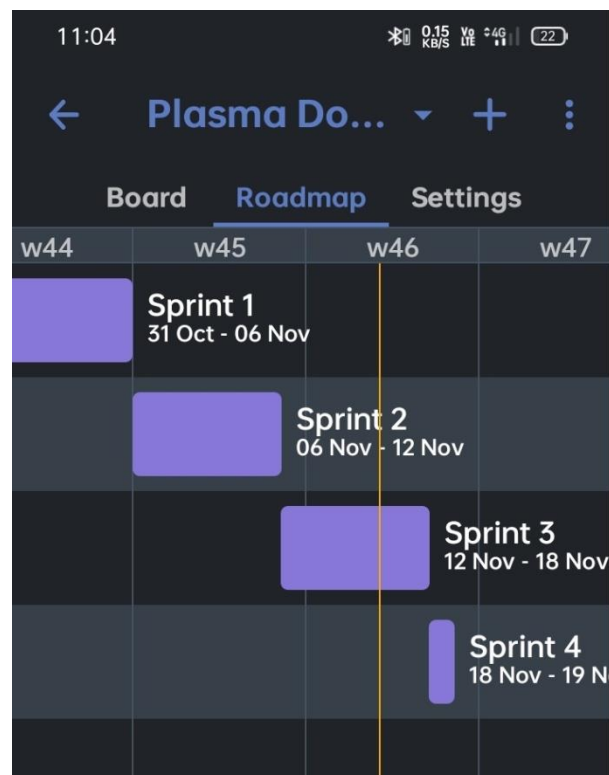
Fig 6.3.1 Report from JIRA

CHAPTER 7

CODING & SOLUTIONING

7.1 Feature 1 Software Requirement Specification (SRS)

The software, Site Explorer is designed for management of web sites from a remote location. The main purpose for preparing this document is to give a general insight into the analysis and requirements of the existing system or situation and for determining the operating characteristics of the system.

Scope: This Document plays a vital role in the development life cycle (SDLC) and it describes the complete requirement of the system. It is meant for use by the developers and will be the basic during testing phase. Any changes made to the requirements in the future will have to go through formal change approval process.

DEVELOPERS RESPONSIBILITIES OVERVIEW:

The developer is responsible for:

- Developing the system, which meets the SRS and solving all the requirements of the system?
- Demonstrating the system and installing the system at client's location after the acceptance testing is successful.
- Submitting the required user manual describing the system interfaces to work on it and also the documents of the system.
- Conducting any user training that might be needed for using the system.

- Maintaining the system for a period of one year after installation.
  - To provide a consistent object-oriented programming environment whether object code is stored and executed locally, executed locally but Internet-distributed, or executed remotely.
  - To provide a code-execution environment that minimizes software deployment and versioning conflicts.
  - To provide a code-execution environment that guarantees safe execution of code, including code created by an unknown or semi-trusted third party.
  - To provide a code-execution environment that eliminates the performance problems of scripted or interpreted environments.
  - To make the developer experience consistent across widely varying types of applications, such as Windows-based applications and Web-based applications.
  - To build all communication on industry standards to ensure that code based on the .NET Framework can integrate with any other code.

The .NET Framework has two main components: the common language runtime and the .NET Framework class library. The common language runtime is the foundation of the .NET Framework. You can think of the runtime as an agent that manages code at execution time, providing core services such as memory management, thread management, and Remoting, while also enforcing strict type safety and other forms of code accuracy that ensure security and robustness. In fact, the concept of code management is a fundamental principle of the runtime. Code that targets the runtime is known as managed code, while code that does not target the runtime is known as unmanaged code.

User Login Form

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <meta http-equiv="X-UA-Compatible" content="ie=edge">
    <link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/meyer-
reset/2.0/reset.min.css">
    <title>Register | Flask</title>
    <!-- Latest compiled and minified CSS -->
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.cs
s" integrity="sha384-
BVYiiSIFeK1dGmJRAkycuHAHRg32OmUcww7on3RYdg4Va+PmSTsz/K68vbdEjh4u"
crossorigin="anonymous">

    <!-- Optional theme -->
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap-
theme.min.css" integrity="sha384-
rHyoN1iRsVXV4nD0JutlnGaslCJuC7uwjduW9SVrLvRYooPp2bWYgmgJQIXwl/Sp"
crossorigin="anonymous">
</head>
<body>
    <div class="container">
        <div class="row" style="margin-top: 40px">
            <div class="col-sm-6">
                <form method="POST">
                    <div class="form-group">
                        <label for="email">Username : </label>
                        <input type="text" name="uname" class="form-control"
id="uname">
                    </div>
                    <div class="form-group">
                        <label for="email">Email : </label>
```

```html
                    <input type="email" name="mail" class="form-control"
id="mail">
                </div>
                <div class="form-group">
                    <label for="email">Password : </label>
                    <input type="password" name="passw" class="form-
control" id="passw">
                </div>
                <button type="submit" class="btn form-control btn-
default">Register</button>
            </form>
        </div>
    </div>
    </div>


<!-- Latest compiled and minified JavaScript -->
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"
integrity="sha384-
Tc5IQib027qvyjSMfHjOMaLkfuWVxZxUPnCJA7l2mCWNIpG9mGCD8wGNIcPD7Txa"
crossorigin="anonymous"></script>
</body>
</html>
```

USER REGISTER FORM

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <meta http-equiv="X-UA-Compatible" content="ie=edge">
    <link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/meyer-
reset/2.0/reset.min.css">
    <title>Register | Flask</title>
    <!-- Latest compiled and minified CSS -->
```

```html
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.cs
s" integrity="sha384-
BVYiiSIFeK1dGmJRAkycuHAHRg32OmUcww7on3RYdg4Va+PmSTsz/K68vbdEjh4u"
crossorigin="anonymous">

    <!-- Optional theme -->
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap-
theme.min.css" integrity="sha384-
rHyoN1iRsVXV4nD0JutlnGaslCJuC7uwjduW9SVrLvRYooPp2bWYgmgJQIXwl/Sp"
crossorigin="anonymous">
</head>
<body>
    <div class="container">
        <div class="row" style="margin-top: 40px">
            <div class="col-sm-6">
                <form method="POST">
                    <div class="form-group">
                      <label for="email">Username : </label>
                      <input type="text" name="uname" class="form-control"
id="uname">
                    </div>
                    <div class="form-group">
                      <label for="email">Email : </label>
                      <input type="email" name="mail" class="form-control"
id="mail">
                    </div>
                    <div class="form-group">
                      <label for="email">Password : </label>
                      <input type="password" name="passw" class="form-
control" id="passw">
                    </div>
                    <button type="submit" class="btn form-control btn-
default">Register</button>
                </form>
            </div>
        </div>
    </div>
```

```
<!-- Latest compiled and minified JavaScript -->
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"
integrity="sha384-
Tc5IQib027qvyjSMfHjOMaLkfuWVxZxUPnCJA7l2mCWNIpG9mGCD8wGNIcPD7Txa"
crossorigin="anonymous"></script>
</body>
</html>
```

7.2 Feature 2

The common language runtime manages memory, thread execution, code execution, code safety verification, compilation, and other system services. These features are intrinsic to the managed code that runs on the common language runtime.

With regards to security, managed components are awarded varying degrees of trust, depending on a number of factors that include their origin (such as the Internet, enterprise network, or local computer). This means that a managed component might or might not be able to perform file-access operations, registry-access operations, or other sensitive functions, even if it is being used in the same active application.

The runtime enforces code access security. For example, users can trust that an executable embedded in a Web page can play an animation on screen or sing a song, but cannot access their personal data, file system, or network. The security features of the runtime thus enable legitimate Internet-deployed software to be exceptionally featuring rich.

The runtime also enforces code robustness by implementing a strict type- and code-verification infrastructure called the common type system (CTS). The

CTS ensures that all managed code is self-describing. The various Microsoft and third-party language compilers

Generate managed code that conforms to the CTS. This means that managed code can consume other managed types and instances, while strictly enforcing type fidelity and type safety.

In addition, the managed environment of the runtime eliminates many common software issues. For example, the runtime automatically handles object layout and manages references to objects, releasing them when they are no longer being used. This automatic memory management resolves the two most common application errors, memory leaks and invalid memory references.

The runtime also accelerates developer productivity. For example, programmers can write applications in their development language of choice, yet take full advantage of the runtime, the class library, and components written in other languages by other developers. Any compiler vendor who chooses to target the runtime can do so. Language compilers that target the .NET Framework make the features of the .NET Framework available to existing code written in that language, greatly easing the migration process for existing applications.

CHAPTER 8

TESTING

In general, testing is **finding out how well something works**. In terms of human beings, testing tells what level of knowledge or skill has been acquired. In computer hardware and software development, testing is used at key checkpoints in the overall process to determine whether objectives are being met.

8.1 Test Cases

Software testing is a critical element of software quality assurance and represents the ultimate review of specification, design and coding. In fact, testing is the one step in the software engineering process that could be viewed as destructive rather than constructive.

A strategy for software testing integrates software test case design methods into a well-planned series of steps that result in the successful construction of software. Testing is the set of activities that can be planned in advance and conducted systematically. The underlying motivation of program testing is to affirm software quality with methods that can economically and effectively apply to both strategic to both large and small-scale systems.

8.2. User Approaches TESTING

The software engineering process can be viewed as a spiral. Initially system engineering defines the role of software and leads to software requirement analysis where the information domain, functions, behavior, performance, constraints and validation criteria for software are established. Moving inward along the spiral, we

come to design and finally to coding. To develop computer software we spiral in along streamlines that decrease the level of abstraction on each turn.

Unit testing focuses verification effort on the smallest unit of software design, the module. The unit testing we have is white box oriented and some modules the steps are conducted in parallel.

8.2.1. WHITE BOX TESTING

This type of testing ensures that

- All independent paths have been exercised at least once
- All logical decisions have been exercised on their true and false sides
- All loops are executed at their boundaries and within their operational bounds
- All internal data structures have been exercised to assure their validity.

To follow the concept of white box testing we have tested each form .we have created independently to verify that Data flow is correct, All conditions are exercised to check their validity, All loops are executed on their boundaries.

8.2.2 BASIC PATH TESTING

Established technique of flow graph with Cyclomatic complexity was used to derive test cases for all the functions. The main steps in deriving test cases were:

Use the design of the code and draw correspondent flow graph.

Determine the Cyclomatic complexity of resultant flow graph, using formula:

V(G)=E-N+2 or

V(G)=P+1 or

V(G)=Number Of Regions

Where V(G) is Cyclomatic complexity,

E is the number of edges,

N is the number of flow graph nodes,

P is the number of predicate nodes.

Determine the basis of set of linearly independent paths.

8.2.3. CONDITIONAL TESTING

In this part of the testing each of the conditions were tested to both true and false aspects. And all the resulting paths were tested. So that each path that may be generate on particular condition is traced to uncover any possible errors.

8.2.4. DATA FLOW TESTING

This type of testing selects the path of the program according to the location of definition and use of variables. This kind of testing was used only when some local variable were declared. The *definition-use chain* method was used in this type of testing. These were particularly useful in nested statements.

8.2.5. LOOP TESTING

In this type of testing all the loops are tested to all the limits possible. The following exercise was adopted for all loops:

- All the loops were tested at their limits, just above them and just below them.
- All the loops were skipped at least once.
- For nested loops test the inner most loop first and then work outwards.
- For concatenated loops the values of dependent loops were set with the help of connected loop.

8.2.6.Code Testing

```html
<!DOCTYPE html>
<html lang="en">
<head>
  <title>IBM Plasma Donar App</title>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css">
  <script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
  <script
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.16.0/umd/popper.min.js"></script>
  <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/js/bootstrap.min.js">
</script>
  <link rel="stylesheet" href="{{ url_for('static', filename='style.css') }}">
</head>
<style>
        .big{
        top:70;
        background-color:white;
        margin-top:80px;
        margin-left:550px;
        margin-right:550px;
        height:200px;
        border-radius: 25px;
        border: 3px solid #4a77d4;
        box-shadow: 6px 8px 4px grey;
        text-align:center;
        }
        .row{

        height:150px;

        }
```

```css
        .col{
            margin:10px;
            margin-left:50px;
            margin-right:50px;
            border-radius: 25px;
            border: 1px solid #4a77d4;
            box-shadow: 0px 8px 4px grey;
            text-align:center;
        }
        .ext{
        margin-top:25px;
        line-height:40px;
        }
        .ext1{
        margin-top:40px;
        line-height:50px;
        font-size:25px;
        color:#f95450;
        }
</style>
<body>

<div class="container-fluid">
<div class="header">
<div><b>Plasma Donar App</b></div>
<ul>
        <li><a href="/requester">Request</a></li>
        <li><a class="active" href="/logout">Logout</a></li>

    </ul>
</div>
  <br>
  <div class="big">
    <div class="box">
        <div class="ext1"><font
size="20px">{{b['1']}}</font><br><b>Donors</b></div>
    </div>
  </div>
  <br>
```

```html
  <div class="row">
    <div class="col" >
        <div class="ext">{{b['2']}}<br><b>O Positive</b></div>
    </div>
    <div class="col" >
        <div class="ext">{{b['3']}}<br><b>A Positive</b></div>
    </div>
    <div class="col" >
        <div class="ext">{{b['4']}}<br><b>B Positive</b></div>
    </div>
    <div class="col" >
        <div class="ext">{{b['5']}}<br><b>AB Positive</b></div>
    </div>
  </div>
  <br>
  <div class="row">
    <div class="col" >
        <div class="ext">{{b['6']}}<br><b>O Negative</b></div>
    </div>
    <div class="col" >
        <div class="ext">{{b['7']}}<br><b>A Negative</b></div>
    </div>
    <div class="col" >
        <div class="ext">{{b['8']}}<br><b>B Negative</b></div>
    </div>
    <div class="col" >
        <div class="ext">{{b['9']}}<br><b>AB Negative</b></div>
    </div>
  </div>
  <div style="height:200px"></div>
</div>
</body>
</html>
```

CHAPTER 9

RESULTS

Overall project result and performance metrices were analysed ,This used to check the progress and correct them before the plotting on the product to the enviroinment

9.1 Performance Metrics

Performance metrics are **data used to track processes within a business**. This is achieved using activities, employee behavior, and productivity as key metrics. These metrics are then used by employers to evaluate performance. This is in relation to an established goal such as employee productivity or sales objectives.

CHAPTER 10

ADVANTAGES & DISADVANTAGES

10.1 Advantages

For many people, blood donation offers many health benefits with few risks. The strict regulation of blood banks means that a donor can give their blood or plasma safely in the United States.

Donated blood can save the lives of people in need. However, according to some medical professionals, it may also benefit the donor.

The sections below will look at some benefits for the donor in more detail.

10.1.1.Identifying adverse health effects

Each person who donates blood completes a simple physical examination and blood test before giving blood.

These are not in-depth tests, but they may help identify unknown health concerns, such as anemia or high or low blood pressure.

The test will check the person's:

- blood pressure

- body temperature

- heart rate

- hemoglobin, or iron, levels

If the test reveals a problem, the person will not be able to donate blood. However, the results could be a first step toward seeking treatment.

10.1.2Contributing to the community

Donating one unit of blood may save the lives of up to three people, according to the American Red Cross.

Blood donors provide a vital service to the community. Making a difference in the lives of others can boost a donor's sense of well-being.

10.1.3Weight management

There are claimsTrusted Source that giving blood burns 650 calories. However, there does not appear to be any scientific evidence to prove this. Any benefits of this calorie loss will be short-term and will not help a person lose weight.

However, a 2012 studyTrusted Source suggests that because blood donation centers need to weigh people before they give blood, this could help identify people with obesity and offer them help to manage their weight and any related health problems.

It can also identify people with a low weight, who may also benefit from counseling and advice.

10.1.3.Reduces iron levels for those with hemochromatosis

The body needs iron to produce red blood cells. However, around 1 million people in the U.S. have type 1 hereditary hemochromatosis. People with this and other types of hemochromatosis have too much iron in their blood.

The excess iron can deposit into different organs of the body, such as the liver and heart, and affect the way those organs function.

According to a 2003 article by the Centers for Disease Control and Prevention (CDC), people with hemochromatosis can benefit from phlebotomy, which is a similar process to donating blood.

People with this condition are allowed to donate blood. In other words, for those with hemochromatosis, donating blood can be a treatment option as well as a way of helping others.

Not all agencies allow donations from people with this condition, but many use their blood in the general donation pool.

10.1.4.Cardiovascular health

In 2019, researchers looked at the data of nearly 160,000 females who had donated blood for 10 years or more. They concluded that blood donation offers a "protective effect of long-term, high-frequency blood donation against cardiovascular disease."

10.1.5.Blood pressure

Some researchTrusted Source has suggested that donating blood may also reduce blood pressure.

In 2015, scientists monitored the blood pressure of 292 donors who gave blood one to four times over the course of a year. Around half had high blood pressure.

Overall, those with high blood pressure saw an improvement in their readings. The more often a person gave blood, the more significant the improvement.

Other expertsTrusted Source have pointed out that because blood pressure testing is an integral part of blood donation, it is a good chance for people to become aware of their reading and, if necessary, learn how to reduce it.

10.1.6.Overall health

In 2007, researchers looked at the data of over 1 million blood donors. Among the participants, there was a 30%Trusted Source lower chance of dying from any cause and a 4% lower chance of developing cancer. The authors concluded that "blood donors enjoy better than average health."

A 2015 studyTrusted Source took a fresh look at the same data. After adjusting for other factors, the researchers concluded that for each annual donation, a person's risk of dying from any cause fell by 7.5%, on average.

This may indicate that donating blood is good for a person's overall health, but the researchers could not confirm this. However, they did point out that donating blood seems unlikely to shorten a person's life span.

10.2.Dis-Advantages

Donating blood is safe, as long as the center follows the standard guidelines.

The U.S. and many other countries have strict regulations to ensure safety. The FDA and American Association of Blood Banks (AABB) monitor blood banks for this purpose.

Safety precautions they take include:

- screening donors for existing health conditions

- using new needles for each donation

- having professional staff on hand

- providing monitoring and refreshments to ensure a safe recovery

However, there are some potential disadvantages of donating blood. The following sections will discuss these in more detail.

10.2.1.Temporary reactions

Sometimes, a person can experience side effects after donating blood.

Although severe adverse effects are rare, temporary reactions can occur, including:

- weakness

- dizziness

- feeling faint

- lightheadedness

- nausea

- bleeding from the needle prick

- bleeding under the skin or bruising

These symptoms usually disappear within 24 hours.

Some ways of minimizing these effects after donation include drinking plenty of fluids and eating well-balanced meals over the next 24–48 hours.

Foods that can boost a person's iron intake include:

- red meat

- spinach

- iron-fortified juices and cereals

10.2.2. Adverse effects

In rare cases, a person may experienceTrusted Source a more severe adverse effect, such as:

- low blood pressure

- muscle contractions

- breathing difficulty

- fainting

- vomiting

- convulsions

These effects are more likely to affect younger donors, those with a low weight, and individuals who are donating for the first time.

10.2.3. Effect on sports performance

Some studies claim that donating blood can reduce athletic performance, due to its effect on iron levels and the cardiovascular and respiratory systems.

However, a 2019 reviewTrusted Source concludes that there is not enough evidence to confirm this.

10.2.4.Procedure

The donation and collection of blood follow a strictly regulated process.

10.2.5.Preparation

The person should try to get a good night's sleep before donating blood. On arriving at the donation center, they will need to:

- register for donation
- complete a medical history
- undergo a mini physical exam

These steps help ensure that a person has not had exposure to diseases that could affect others through a blood donation.

To give blood in the U.S., a person must normally:

- be at least 17 years old
- weigh at least 110 pounds
- have good overall health
- provide two pieces of identification the first time they donate

They will also need to fill in a form.

10.2.6. During the donation

During the process of donating blood, a healthcare provider will:

1. Clean the donor's arm with an alcohol pad.

2. Insert a new and sterile needle into a vein.

3. Attach the needle to collection equipment, consisting of tubing and a bag.

4. Allow the blood to flow into the bag until it is full.

The person will donate one unit of blood, and this will take 6–10 minutes. The whole process will take around 45–60 minutes.

10.2.7. After the donation

After the donation, a healthcare provider will apply pressure with cotton gauze and place a dressing over the donor's arm.

The donor will usually need to wait for 10–15 minutes before leaving, during which time they will receive some refreshments.

If the needle prick is bleeding after donation, the donor should apply pressure and raise the arm for 3–5 minutes.

If there is bruising or bleeding under the skin, they can apply a cold pack intermittently for 24 hours, then alternate with warm packs.

10.2.8.Considerations

Before donating blood or blood products, a person should ensure that they meet the requirements.

Some questions to consider include:

- How is their overall health?
- Do they have any existing health conditions, such as hepatitis or HIV?
- Do they meet the age and weight requirements?
- Have they recently traveled or had a tattoo?
- Do they use recreational drugs, especially intravenously?
- If they are donating platelets, have they taken aspirin within the last 48 hours?
- If they have diabetes, do they manage it with medication?

These and many other factors can affect a person's ability to give blood.

It takes only 24 hours for the body to replenish its plasma, but it can take 4–6 weeks to replace the missing blood.

CHAPTER 11

CONCLUSION

It has been a great pleasure for me to work on this exciting and challenging project. 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 **"Blood Bequeath Federal".** 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.

11.1.BENEFITS:

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 extent.

- 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,

CHAPTER 12

FUTURE SCOPE

The effectiveness of the donor selection process is enhanced if relevant information and counselling are provided to prospective donors, enabling them to self-defer if they recognize they are unsuitable to donate blood. Blood donors may be deferred, either on a temporary or permanent basis, on the grounds of their health status, medical or travel history, or TTI risk. Pre-donation counselling is particularly important for individuals who are temporarily or permanently deferred from blood donation, as it provides them with clear information about the reasons for deferral, maintaining healthy lifestyles, and referral for further testing, treatment, care and support, as appropriate.

CHAPTER 13

13.1 APPENDIX Source Code GitHub & Project Demo Link

Github Link: https://github.com/IBM-EPBL/vignesh.git

Project Demo link: https://drive.google.com/file/d/1HPcAh2-WXGeXBzv6DH9yuvntcbkn_HRo/view?usp=share_link

Appendix Source code:

```
from
distutils.log
import
debug
            from sendgridmail import sendmail
            from flask import Flask, render_template, request, redirect, url_for, session
            import ibm_db
            import re
            import os
            from dotenv import load_dotenv
            load_dotenv()
            app = Flask(__name__)

            app.secret_key = 'a'
            conn=ibm_db.connect(os.getenv('DB_KEY'),"","")
            @app.route('/')
            @app.route('/login')
            def login():
               return render_template('login.html')
            @app.route('/loginpage',methods=['GET', 'POST'])
            def loginpage():
               global userid
               msg = ''
```

```python
    if request.method == 'POST' :
        username = request.form['username']
        password = request.form['password']
        sql = "SELECT * FROM donors WHERE username =? AND password=?"
        stmt = ibm_db.prepare(conn, sql)
        ibm_db.bind_param(stmt,1,username)
        ibm_db.bind_param(stmt,2,password)
        ibm_db.execute(stmt)
        account = ibm_db.fetch_assoc(stmt)
        print (account)
        if account:
            session['loggedin'] = True
            session['id'] = account['USERNAME']
            userid=  account['USERNAME']
            session['username'] = account['USERNAME']
            msg = 'Logged in successfully !'
            sendmail(account['EMAIL'],'Plasma donor App login','You are
successfully logged in!')
            return redirect(url_for('dash'))
        else:
            msg = 'Incorrect username / password !'
    return render_template('login.html', msg = msg)


@app.route('/registration')
def home():
    return render_template('register.html')
@app.route('/register',methods=['GET', 'POST'])
def register():
    msg = ''
    if request.method == 'POST' :
        username = request.form['username']
        email = request.form['email']
        password = request.form['password']
        phone = request.form['phone']
        city = request.form['city']
        infect = request.form['infect']
        blood = request.form['blood']
        sql = "SELECT * FROM donors WHERE username =?"
```

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```python
        stmt = ibm_db.prepare(conn, sql)
        ibm_db.bind_param(stmt,1,username)
        ibm_db.execute(stmt)
        account = ibm_db.fetch_assoc(stmt)
        print(account)
        if account:
            msg = 'Account already exists !'
        elif not re.match(r'[^@]+@[^@]+\.[^@]+', email):
            msg = 'Invalid email address !'
        elif not re.match(r'[A-Za-z0-9]+', username):
            msg = 'name must contain only characters and numbers !'
        else:
            insert_sql = "INSERT INTO  donors VALUES (?, ?, ?, ?, ?, ?, ?)"
            prep_stmt = ibm_db.prepare(conn, insert_sql)
            ibm_db.bind_param(prep_stmt, 1, username)
            ibm_db.bind_param(prep_stmt, 2, email)
            ibm_db.bind_param(prep_stmt, 3, password)
            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, phone)
            ibm_db.execute(prep_stmt)
            msg = 'You have successfully registered !'
            sendmail(email,'Plasma donor App Registration','You are successfully
Registered {}!'.format(username))
    elif request.method == 'POST':
        msg = 'Please fill out the form !'
    return render_template('register.html', msg = msg)
@app.route('/dashboard')
def dash():
    if session['loggedin'] == True:
        sql = "SELECT COUNT(*), (SELECT COUNT(*) FROM DONORS
WHERE blood= 'O Positive'), (SELECT COUNT(*) FROM DONORS WHERE
blood='A Positive'), (SELECT COUNT(*) FROM DONORS WHERE blood='B
Positive'), (SELECT COUNT(*) FROM DONORS WHERE blood='AB
Positive'), (SELECT COUNT(*) FROM DONORS WHERE blood='O
Negative'), (SELECT COUNT(*) FROM DONORS WHERE blood='A
Negative'), (SELECT COUNT(*) FROM DONORS WHERE blood='B
```

```python
Negative'), (SELECT COUNT(*) FROM DONORS WHERE blood='AB
Negative') FROM donors"
        stmt = ibm_db.prepare(conn, sql)
        ibm_db.execute(stmt)
        account = ibm_db.fetch_assoc(stmt)
        print(account)
        return render_template('dashboard.html',b=account)
    else:
        msg = 'Please login!'
        return render_template('login.html', msg = msg)
@app.route('/requester')
def requester():
    if session['loggedin'] == True:
        return render_template('request.html')
    else:
        msg = 'Please login!'
        return render_template('login.html', msg = msg)
@app.route('/requested',methods=['POST'])
def requested():
    bloodgrp = request.form['bloodgrp']
    address = request.form['address']
    name=  request.form['name']
    email=  request.form['email']
    phone= request.form['phone']
    insert_sql = "INSERT INTO  requested VALUES (?, ?, ?, ?, ?)"
    prep_stmt = ibm_db.prepare(conn, insert_sql)
    ibm_db.bind_param(prep_stmt, 1, bloodgrp)
    ibm_db.bind_param(prep_stmt, 2, address)
    ibm_db.bind_param(prep_stmt, 3, name)
    ibm_db.bind_param(prep_stmt, 4, email)
    ibm_db.bind_param(prep_stmt, 5, phone)
    ibm_db.execute(prep_stmt)
    sendmail(email,'Plasma donor App plasma request','Your request for plasma is
recieved.')
    return render_template('request.html', pred="Your request is sent to the
concerned people.")
@app.route('/logout')
def logout():
```

```python
    session.pop('loggedin', None)
    session.pop('id', None)
    session.pop('username', None)
    return render_template('login.html')
if __name__ == '__main__':
```

```
app.run(host='0.0.0.0',debug='TRUE')
```