1.Introduction

1.1 Project Overview

Plasma is the clear, straw-colored liquid portion of blood that remains after red blood cells, white blood cells, platelets and other cellular components are removed. It is the single largest component of human blood, comprising about 55 percent, and contains water, salts, enzymes, antibodies and other proteins.Only a small number of people living in the U.S. who are eligible to donate blood or source plasma actually donate. What's important is that we encourage all forms of donation from those who are eligible, so that they may contribute life-saving blood and source plasma to those in need.Plasma donation requires a commitment both in the amount of time for each donation and frequency of donation. Typically it takes between one and three hours to donate source plasma, and plasma can be donated twice within a seven day period. Whole blood donation takes less time under 30 minute and donors donate less frequently no more than once in eight weeks. The programs may fit into a donor's life differently at various times in the donor's life, and are equally important in helping to fulfill a vital medical need. With the help of this project patients who require immediate Plasma donation could avail without any procrastination. Moreover, this project is going to benefit the medical sector in a immense way.

1.2 Purpose

Although the government is carrying out Covid vaccination campaigns on a large scale, the number of vaccines produced is not enough for all the population to get vaccinated at present. And with the corona positive cases rising every day, saving lives has become the prime matter of concern. As per the data provided by WHO more than 3 million people have died due to the coronavirus However, apart from vaccination, there is another scientific method by which a covid infected person can be treated and the death risk can be reduced. This plasma therapy is considered to be safe & promising. A person who has recovered from Covid can donate his/her plasma to a person who is infected with the coronavirus. This system proposed here aims at connecting the donors & the patients by an online application. By using this application, the users can either raise a request for plasma donation or requirement. This system is used if anyone needs a Plasma Donor. This system comprises of Admin and User where both can request for a Plasma. In this system there is something called an active user, which means the user is an Active member of the App and has recovered from Covid 19, only such people are recommended here for Plasma Donation. Both parties can Accept or Reject the request. User has to Upload a Covid Negative report to be able to Donate Plasma.

2. LITERATURE SURVEY

2.1 Existing problem

Nowadays there numerous number of people who have been looking for a plasma donor by searching the hospitals individually during their difficult times of struggle. Additionally, there less chance for a patient to find a correct or perfect plasma donor through searching medical institutions paper records and blogs. While there are few medical institutions implementing plasma donor applications through modern technologies,its being difficult for people to access it to fullest. Some web application consumes lot of time to find solution for a particular problem and it fails on numerous occasions. And also it does not have a easy to handle mechanism because of which patient are reluctant to use the existing one.

2.2 References

[1]. Rehab S. Ali;Tamer F. Hafez;Ali Badawey Ali;Nadia Abd-Alsabour 2017 International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET)

[2]. Muhammad Fahim;Halil Ibrahim Cebe;Jawad Rasheed;Farzad Kiani 2016 Sixth International Conference on Digital Information and Communication Technology and its Applications (DICTAP)

[3]. Shreyas Anil Chaudhari;Shrutika Subhash Walekar;Khushboo Ashok Ruparel;Vrushali Milind Pandagale 2018 International Conference on Smart City and Emerging Technology (ICSCET)

[4]. S. Hinrichs;P. Colquhoun 2008 5th IET Seminar on Appropriate Healthcare Technologies for Developing Countries.

[5]. Ahmed AL-Kalbani;Syed Imran Ali Kazmi;Jitendra Pandey 2018 7th International Conference on Reliability, Info-com Technologies and Optimization (Trends and Future Directions) (ICRITO).

[6].Francisca González;Felipe Vera;Fernando González;Juan D. Velásquez 2020 IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT).

[7]. P.L. Wijayathilaka;P.H. Pahala Gamage;K.H.B. De Silva;A.P.P.S. Athukorala;K.A.D.C.P. Kahandawaarachchi;K.N. Purchasing 2020 2nd International Conference on Advancements in Computing (ICAC).

[8]. Diana Hawashin;Raja Jayaraman;Khaled Salah;Ibrar Yaqoob;Mecit Can Emre Simsekler;Samer Ellahham.

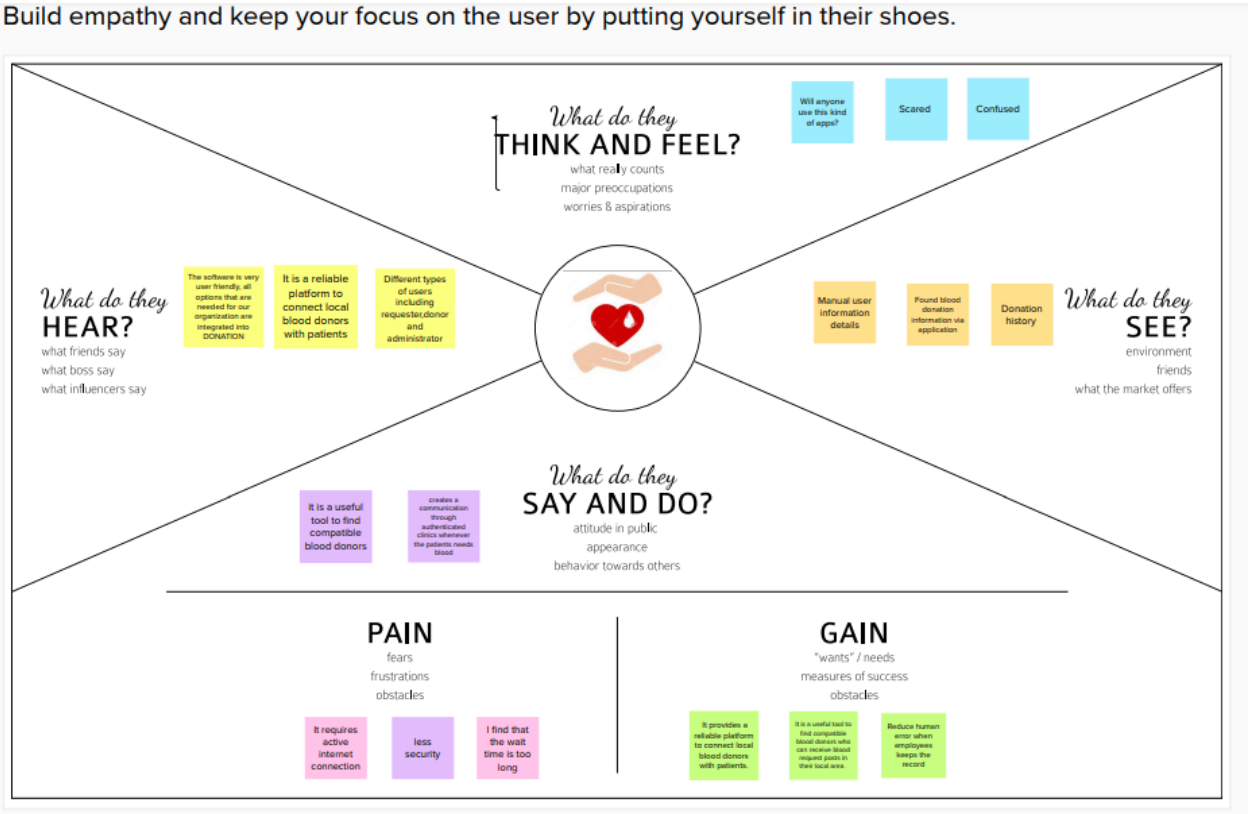
2.3 Problem Statement Definition

To find the nearest available potential plasma donor and to maintain optimal level of blood bank reserves and a connecting platform for blood donors and blood blanks without any procrastination and with the help of available resources in minimal time after receiving the request from the person in need of donation .

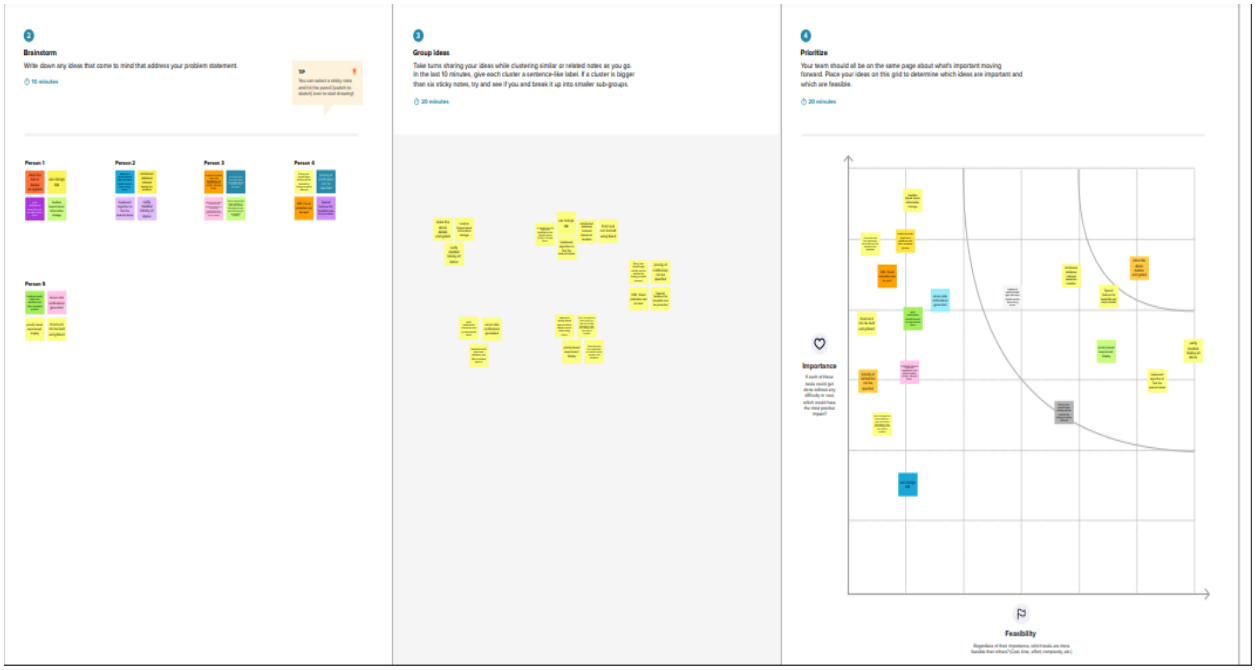
3 .IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas

Build empathy and keep your focus on the user by putting yourself in their shoes.



3.2 Ideation & Brainstorming



3.3 Proposed Solution

To find the nearest available potential plasma donor and to maintain optimal level of blood bank reserves and a connecting platform for blood donors and blood banks. The proposed system implements a cloud based web application as a solution to this problem. The information of the donors fetched using registration form filling structure. When the administrator needs blood donor he fetched the information from the cloud and make request to the donor based on the location. If donor accept his request he will sent the acknowledgment to the administrator. It provides a reliable platform to connect local blood donors with patients and hence reduce human error when employees keeps the record. The software is very user friendly. Different types of users including requester, donor and administrator. This application can be linked with blood bank and blood donation camps everywhere.As this is a web application and uses cloud storage, any further enhancements in technology can be incorporated within this application.

3.4 Problem solution Fit

1. CUSTOMER SEGMENT:

Plasma donor who wants to donate blood. Hospital or blood bank administration who needs the blood.

2.JOBS-TO-BE-DONE to PROBLEMS:

Helps to find the nearest available potential plasma donor and to maintain optimal level of blood bank reserves and a connecting platform for blood donors, blood blanks.

3.TRIGGERS:

Need of blood at the emergency situation of patients.

4. EMOTIONS: BEFORE / AFTER

Communication through authenticated blood bank managements whenever patients need blood by using available information on database.

5. AVAILABLE SOLUTIONS:

Donor information gets stored and when required.

6.CUSTOMER CONSTRAINTS:

Requiring active internet connection.

7.BEHAVIOUR:

The administrator fetched the information from the e cloud and make notification to the donor based on location.

8.CHANNELS of BEHAVIOUR:

8.1Login
8.2 View information of the patient.
8.3 Send acknowledgement.

9.PROBLEM ROOT CAUSE:

Communication delay between donor ad receiver.

10.YOUR SOLUTION :

Make notification and receive t acknowledgement from the donor.

4. REQUIREMENT ANALYSIS

4.1 Functional requirement

Following are the functional requirements of the proposed solution.

1.User Registration: Registration through phone number Registration through Gmail.
2.User Confirmation :Confirmation via acknowledgement.
3.Username Generation : Every user has a private account.

4.Administrator request: Administrator making request to the donor for plasma.

5.Sending acknowledgement :The request is accepted by donor then the acknowledgement is send to the administrator.

6.Plasma donation: The receiver receive the plasma from the donor.

4.2 Non-Functional Requirements:

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

1.Reliability :This software is very user friendly all options that are needed for our organization are integrated into the donation.

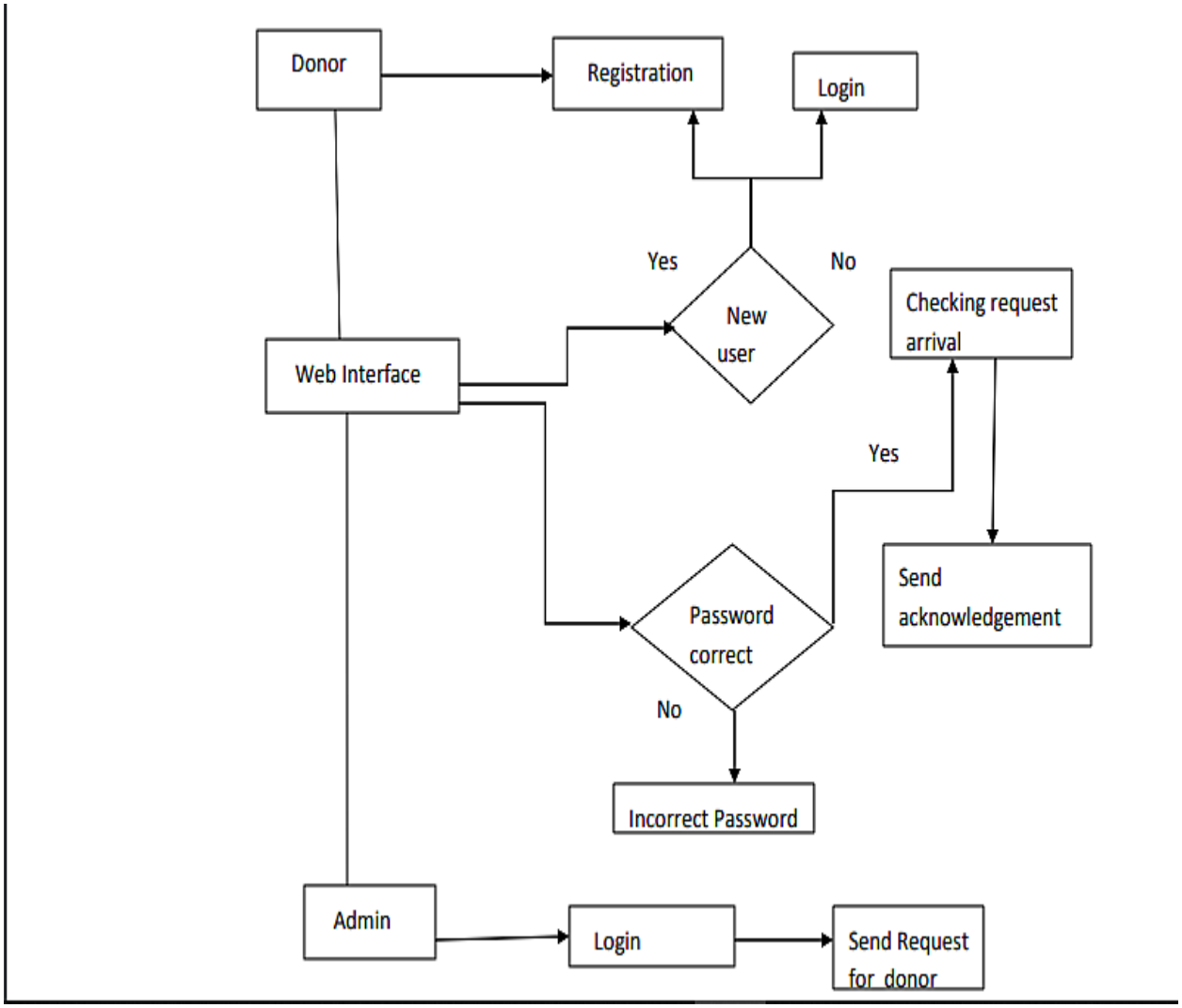
2.Performance :Additional facilities added .

3.Availability: Available to the registered candidates.

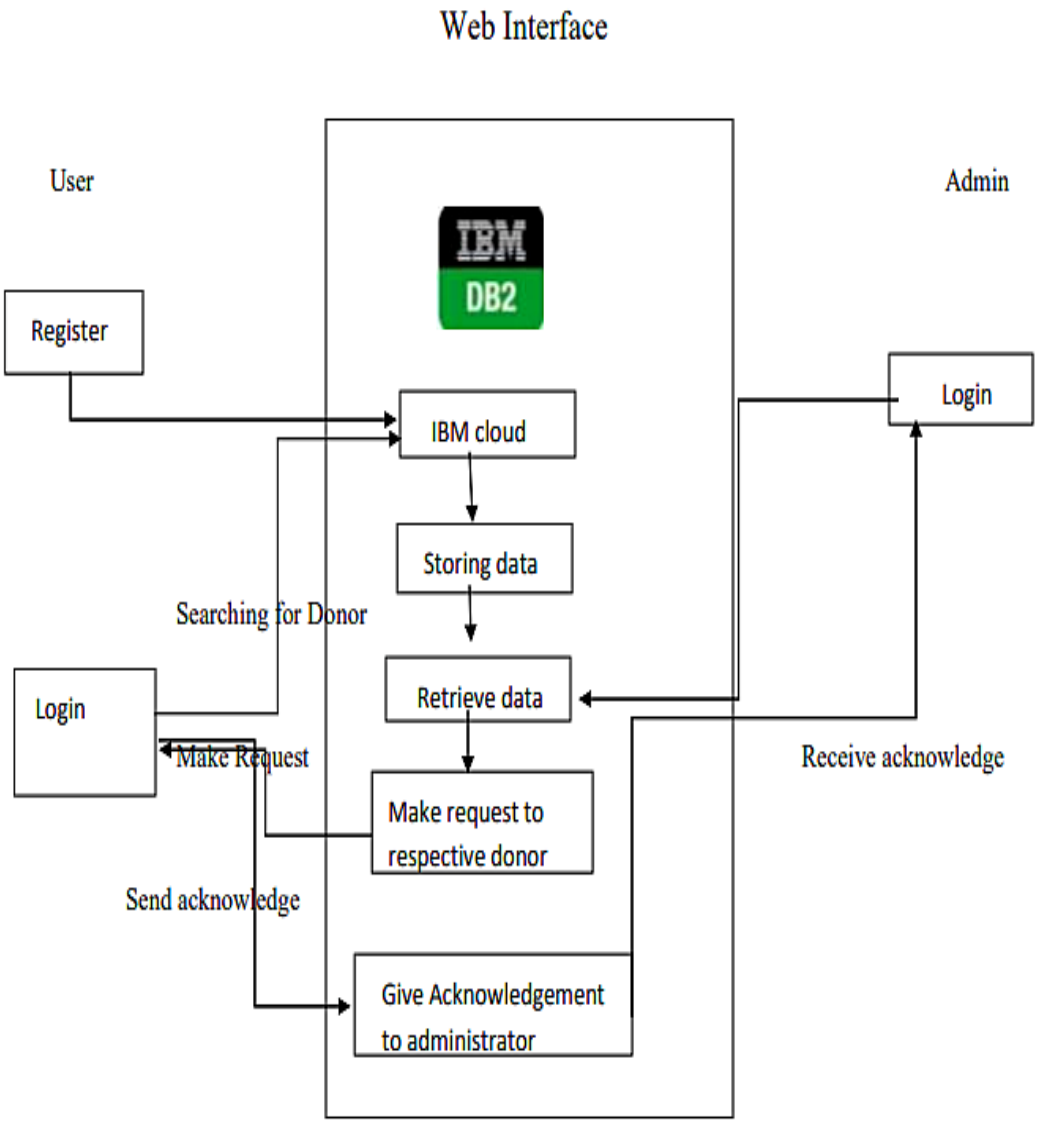
4.Scalability : Improved scalability.

5. PROJECT DESIGN

5.1 Data Flow Diagrams



5.2 Solution & Technical Architecture



5.3 User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
Customer	Confirmation	USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
Customer	Registration	USN-3	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-2
Customer	Registration	USN-4	As a user, I can register for the application through Gmail	I can register and access the dashboard using gmail	Medium	Sprint-1
Customer	Login	USN-5	As a user, I can log into the application by entering email & password	I can login and access the dashboard by entering email id and password.	High	Sprint-1
Customer	Dashboard	USN-6	As a user, I can view and manage my profile, donation history and download the receipts.	I can view and manage my data at each section of the dashboard.	High	
Customer (Web user)	Website	USN-7	Act as an interface between the customer and donors		High	Sprint-4
Customer Care Executive	Help/support		As a service agent i will help the customer to get rid of queries and provide solutions to the raised queries.	I can review and provide solutions to customer request	High	Sprint-5
Administrator	Admin Dashboard	USN-1	As an Admin, I can view and manage the customer details	I can access the admin dashboard and perform functions like adding new donor, deleting the existing donor and viewing the donor details	High	Sprint- 3
Administrator	Admin Dashboard	USN-2	As an Admin, I can manage plasma collection details	I can add the new plasma stock, delete the existing stock and view the plasma details	High	Sprint - 4

6.PROJECT PLANNING & SCHEDULING

6.1 Sprint Planning & Estimation

Phase 1

- Registration form created and validated
- User database schema designed -

Gmail and email user authentication is done

- Form for donor is created

Phase 2

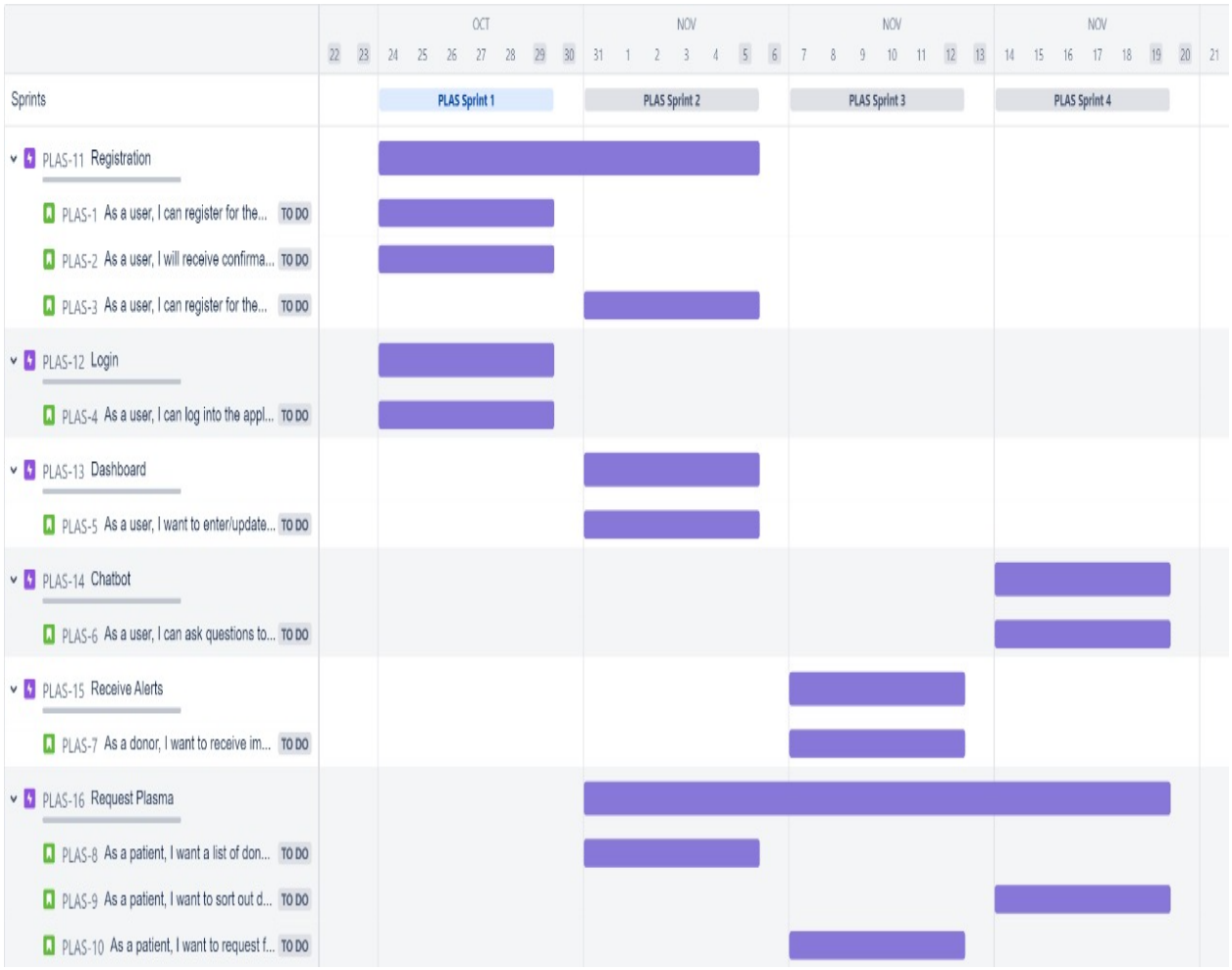
- A chat bot to assist users built
- Admin interface and donor page implementation
- Connecting chatbot to IBM database

Phase 3
- UI enhancement for dashboard and user view improved
- Integrating the application with send grid
- Donor information retrieved using chatbot

6.2 Sprint Delivery Schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority
Sprint-1	Login	USN-1	Create a registration form a web page for user log in	2	High
Sprint-1	Login	USN-2	Validating form fields in javascript and linking backend flask	1	High
Sprint-1	Login	USN-3	Gmail and Facebook external api used to authenticate user	2	Low
Sprint-1	Database	USN-4	Designing database schema and storing simple user information	2	Medium
Sprint-1	Login	USN-5	Form to collect donor details created and linked to backend	1	High
Sprint-2	Chatbot	USN-6	Creating a chatbot using watson assistant	2	High
Sprint-2	Chatbot	USN-7	Connecting chatbot with IBM DB2 database	1	Medium
Sprint-2	Dashboard	USN-8	CSS and javascript should be used to create an admin page	1	Low
Sprint-2	Database	USN-9	Basic dashboard interface for users and admin will be completed	1	Medium
Sprint-3	Database	USN-10	Storage format of donor information should be designed and implemented	2	High
Sprint-3	Chatbot	USN-11	Chat should be able to retrieve donor information from database	2	High

6.3 Reports from JIRA



7. CODING & SOLUTIONING

7.1 Feature 1

User can add Donors.
User can Add Patients.
User can search specifically for Donors.

User can search specifically for Patients.

Code:

```
<!DOCTYPE html>
<html lang="en" dir="ltr">
  <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" />
    <title>Signup</title>
    <link rel="stylesheet" href="{{ url_for('static',    filename='css/login.css') }}">
</head>
  <body>
    <div class="main">
       <p class="sign" align="center">Sign in</p>
        {% with messages = get_flashed_messages() %}
          {% if messages %}
               {% for message in messages %}
               <div class="msg"> <p>{{ message }}</p>  </div>
               {% end for %}
          {% end if %}
        {% end with %}

       <form class="form1" action="/signupmethod" method="post">
         <input class="un" name="name" type="text" align="center" placeholder="Name">
         <input class="un" name="email" type="email" align="center" placeholder="Email ID">
         <input class="un" name="dob" type="text" onblur="(this.type='text')" onfocus="(this.type =
'date')"  id="date" align="center" placeholder="Date of Birth">
         <input class="un" name="uname" type="text" align="center" placeholder="Username">
         <input class="pass" name="psw" type="password" align="center" placeholder="Password">
         <input class="pass" name="con_psw" type="password" align="center"
placeholder="Confirm Password">
         <input type="submit" class="submit" align="center"/>
         <p class="forgot" align="center"><a href="#">Forgot Password?</a></p>
           <a href="/"><p class="forgot" align="center">Already have an account? Login</p></a>
       </form>
    </div>
{% block content %}
{% end block %}

</body>
</html>
```

7.2 Feature 2
User can add Edit Profile.
User can see nearby donors/patients in Radar.
FAQs section to get all details regarding Plasma.

Code:

```
<!DOCTYPE html>
<html lang="en" dir="ltr">
  <head>
    <meta charset="utf-8" />
    <title>Home</title>

    <link
      rel="stylesheet"
      href="https://use.fontawesome.com/releases/v5.8.1/css/all.css"
    />
    <meta charset="UTF-8" />
    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />

    <link
      rel="stylesheet"
      href="{{ url_for('static',filename='css/style.css') }}"
    />
  </head>
  <body>
    {% extends "template.html" %} {% block content %}
    <form action="{{ url_for('requested')}}" method="post">
      <input
        type="text"
        name="name"
        placeholder="Enter Name"
        required="required"
        style="color: black"
      />
      <input
        type="email"
        name="email"
        placeholder="Enter Email"
        required="required"
        style="color: black"
      />
```

```
      <input
        type="text"
        name="phone"
        placeholder="Enter 10-digit mobile number"
        required="required"
        style="color: black"
      />
      <select name="bloodgrp">
        <option value="select" selected>Choose your blood group</option>
        <option value="O+">O Positive</option>
        <option value="A+">A Positive</option>
        <option value="B+">B Positive</option>
        <option value="AB+">AB Positive</option>
        <option value="O-">O Negative</option>
        <option value="A-">A Negative</option>
        <option value="B-">B Negative</option>
        <option value="AB-">AB Negative</option>
      </select>
      <textarea
        rows="4"
        placeholder="Enter the address"
        required="required"
        style="color: black"
        name="address"
      ></textarea>
      <button type="submit" class="btn btn-primary btn-block btn-large">
        Submit the request
      </button>
    </form>

    <div>{{ pred }}</div>

    {% endblock %}
  </body>
</html>
```

Footer

8.TESTING

8.1 Test Cases

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

8.2 USER ACCEPTANCE TESTING

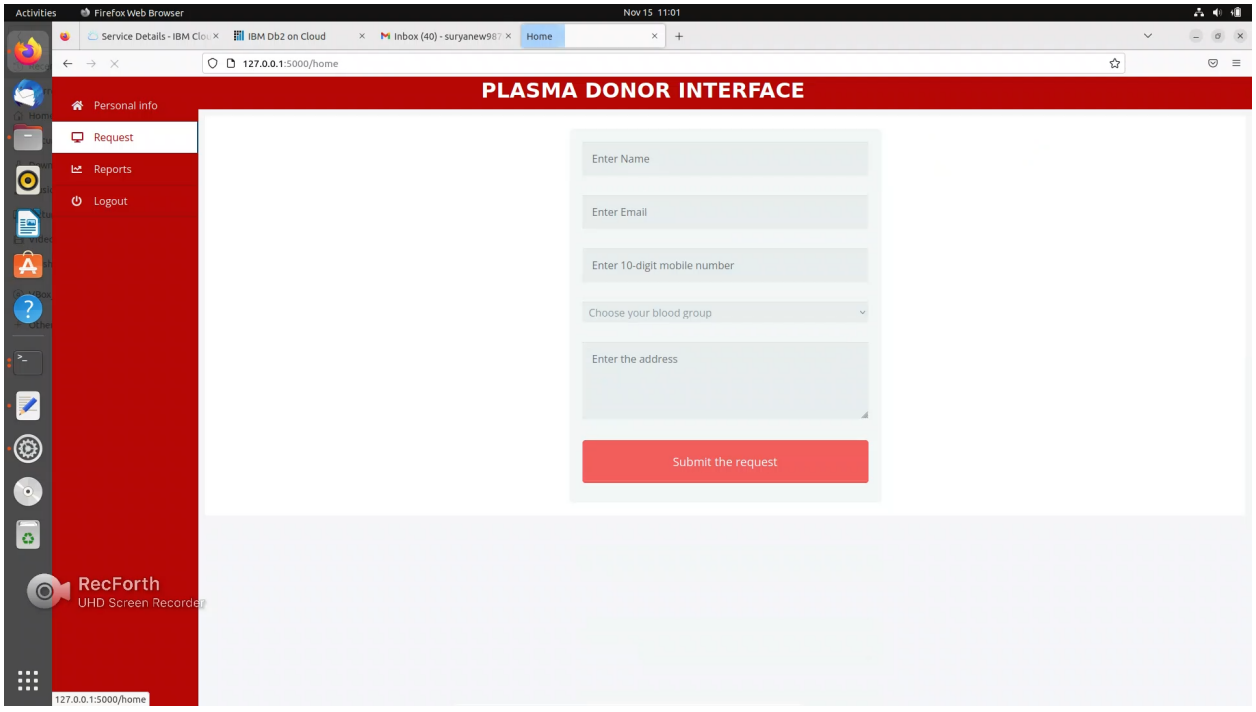
1. Defect Analysis

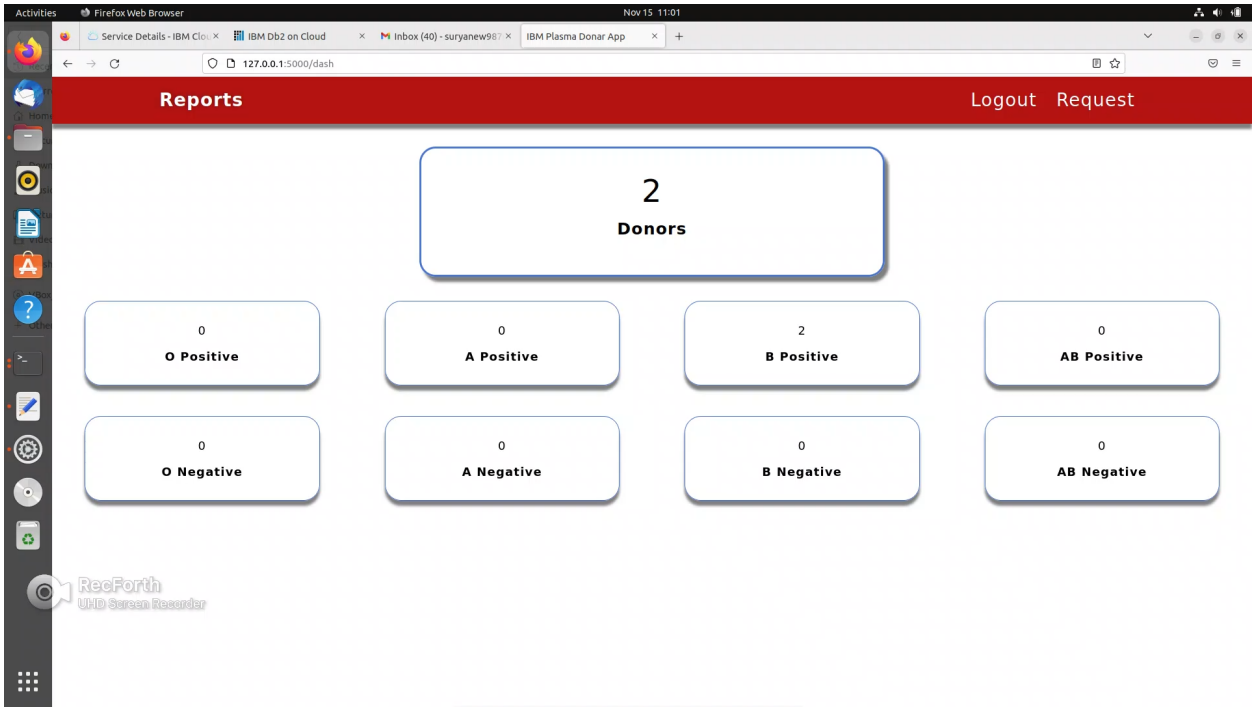
Section	Total Cases	Not Tested	Fail	Pass
Print Engine	5	0	1	4
Client Application	47	0	2	45
Security	3	0	0	3
Outsource Shipping	2	0	0	2
Exception Reporting	11	0	2	9
Final Report Output	5	0	0	5
Version Control	3	0	1	2

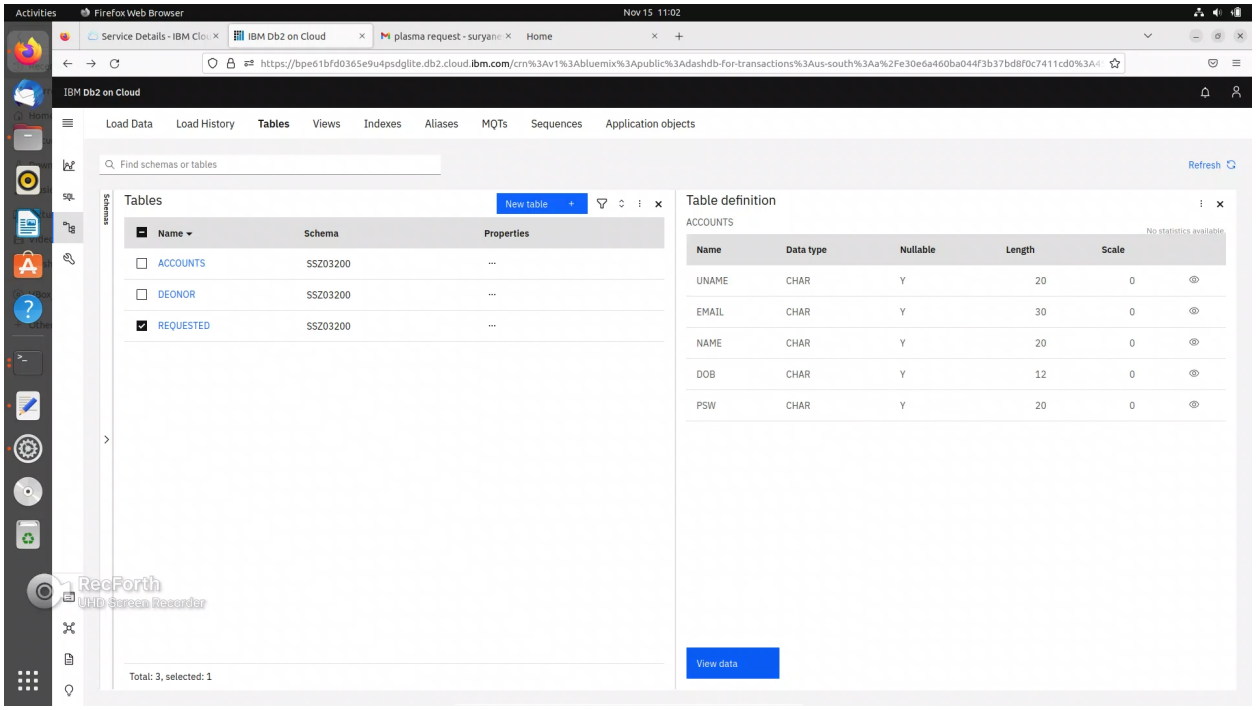
This report shows the number of resolved or closed bugs at each severity level, and how they were resolved

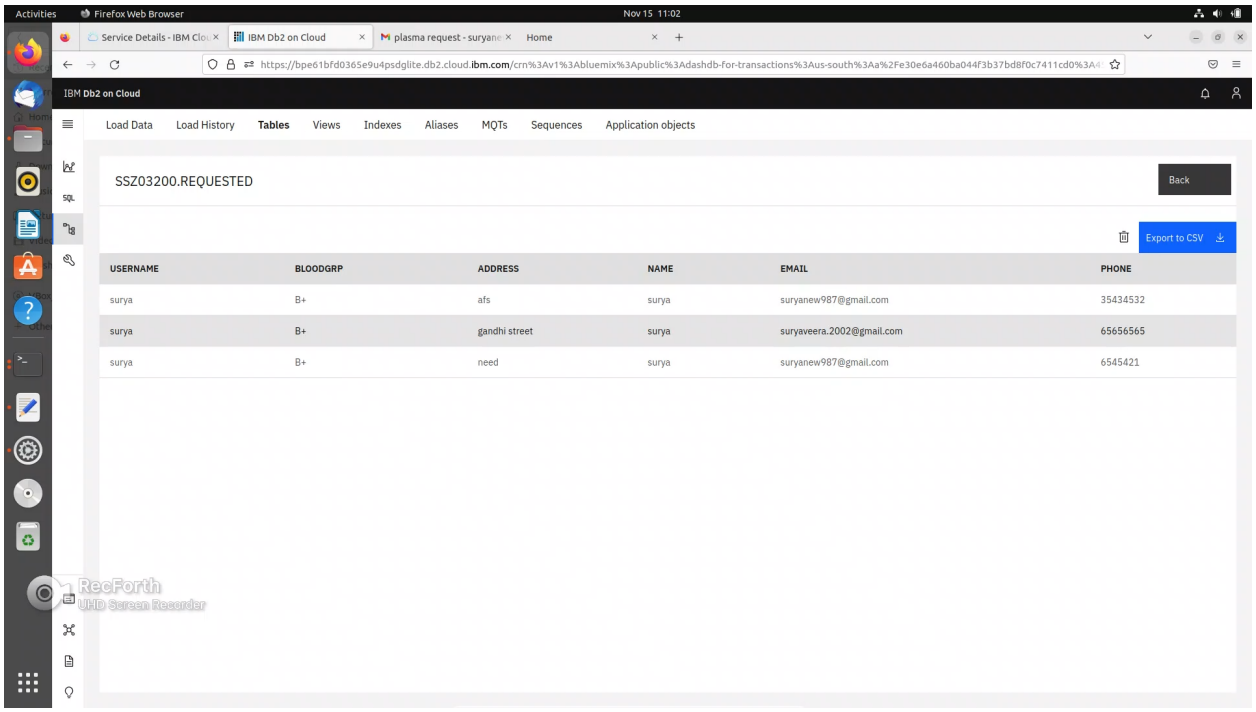
Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	11	4	2	2	19
Duplicate	1	1	2	0	4
External	2	3	0	1	6
Fixed	10	2	3	20	35
Not Reproduced	0	0	2	0	2
Skipped	0	0	2	1	3
Won't Fix	0	5	2	1	8
Totals	24	15	13	25	77

9.RESULTS


Activities
Firefox Web Browser
Nov 15 11:01
Service Details - IBM Clou
IBM Db2 on Cloud
Inbox (40) - suryanew987
Home
127.0.0.1:5000/home
PLASMA DONOR INTERFACE
Personal info
Request
Reports
Logout
Enter Name
Enter Email
Enter 10-digit mobile number
Choose your blood group
Enter the address
Submit the request
RecForth
UHD Screen Recorder
127.0.0.1:5000/home


Activities
Firefox Web Browser
Nov 15 11:01
Service Details - IBM Clou
IBM Db2 on Cloud
Inbox (40) - suryanew987
IBM Plasma Donar App
127.0.0.1:5000/dash
Reports
Logout
Request
2
Donors
0
O Positive
0
A Positive
2
B Positive
0
AB Positive
0
O Negative
0
A Negative
0
B Negative
0
AB Negative
RecForth
UHD Screen Recorder





10. Advantages and Disadvantages

Advantages

It is easy to use

It is flexible in different OS

Disadvantages
It is slower than mobile Applications

11.CONCLUSION

To conclude the description about the project that is developed using IBM cloud based on the requirement specification of the user and the analysis of the existing system, with flexibility for future enhancement.Plasma Donor Website is very useful for blood required patients and this Plasma Donor Website is designed for people /Organisation who in need of plasma all around the globe.

12.Future Scope

It is very Helpful for the Patients and Hospitals to identifying the donors and connecting with them as quick as possible without any procrastination and It can be developed as a mobile app Development.