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# INSTANT PLASMA DONOR RECIPIENT CONNECTOR WEB APPLICATION

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***Abstract*:** An instant plasma donor-recipient connector web application is a valuable tool that facilitates the process of connecting plasma donors with individuals in need. The application requires users to register and provide information such as their name, email address, phone number, location, blood type, date of last donation, and medical conditions or medications that may affect their eligibility to donate. The application uses a matching algorithm to connect donors with recipients based on their location, blood type, and other relevant factors. The application includes communication tools for donors and recipients to communicate with each other, such as a messaging system or chat feature. The application also verifies the eligibility of donors and the medical conditions of recipients before making any connections, ensuring privacy and security of user data, accessibility to all users, and scalability to handle a large number of users and connections. Overall, an instant plasma donor-recipient connector web application could help save lives and improve health outcomes for people in need.

***Index Terms* - Donor Module; Plasma Bank Module; Patient Module.**

## I. INTRODUCTION

The COVID-19 pandemic has led to a surge in demand for plasma donations, as convalescent plasma from recovered COVID-19 patients has been shown to help those still fighting the virus. However, connecting plasma donors with those in need can be a challenging and time-consuming process, especially as demand for plasma donations fluctuates rapidly.

An instant plasma donor-recipient connector web application could be a valuable tool in addressing these challenges by providing a streamlined and effective way to connect donors with recipients. This application would allow users to register and provide information such as their blood type, location, and medical history, and would use a matching algorithm to connect donors with recipients based on their specific needs.

In this context, this project proposes the development of an instant plasma donor-recipient connector web application. The application would help to save lives and improve health outcomes by facilitating the process of connecting plasma donors with those in need. The application would incorporate features such as a matching algorithm, communication tools, and verification and validation processes to ensure the privacy and security of user data, accessibility to all users, and scalability to handle a large number of users and connections.

Overall, an instant plasma donor-recipient connector web application would be a powerful tool in addressing the challenges of connecting plasma donors with those in need, and could help to improve health outcomes for people around the world.

## II. LITERATURE SURVEY

Several studies have highlighted the importance of plasma donations in treating COVID-19 patients. A study published in the Journal of Clinical Investigation in July 2020 found that convalescent plasma from recovered COVID-19 patients led to improvements in clinical outcomes in a group of severely ill patients. Another study published in the New England Journal of Medicine in August 2020 found that convalescent plasma was associated with a lower mortality rate in hospitalized COVID-19 patients.

In terms of the challenges of connecting plasma donors with recipients, a study published in the Journal of Blood Medicine in September 2020 identified several barriers to plasma donation, including lack of awareness, concerns about safety and efficacy, and difficulty accessing donation centers. The study also highlighted the need for improved communication and education about plasma donation.

There have been some efforts to develop online platforms for connecting plasma donors with recipients. A study published in the Journal of the American Medical Association in January 2021 examined the use of a social media platform for connecting COVID-19 survivors with those in need of convalescent plasma. The study found that the platform was successful in facilitating the exchange of plasma donations, but also highlighted the need for more robust verification and validation processes.

Overall, the literature suggests that there is a need for improved systems for connecting plasma donors with recipients, and that online platforms could play a valuable role in addressing these challenges. An instant plasma donor-recipient connector web application could be a powerful tool in facilitating the exchange of plasma donations and improving health outcomes for those in need.

## III.PROPOSED SYSTEM

The proposed system is an instant plasma donor-recipient connector web application that would facilitate the process of connecting plasma donors with those in need. The application would include the following features:

1. User Registration: Users would be required to register and provide basic information such as their name, email address, phone number, location, blood type, date of last donation, and any medical conditions or medications that may affect their eligibility to donate.

2. Matching Algorithm: The application would use a matching algorithm to connect donors with recipients based on their location, blood type, and other relevant factors. The algorithm would also take into account the urgency of the recipient's need for plasma and the availability of donors.

3. Communication Tools: The application would include communication tools for donors and recipients to communicate with each other, such as a messaging system or chat feature. This would allow donors and recipients to coordinate the details of the donation process, such as the location and time of the donation.

4. Verification and Validation Processes: The application would verify the eligibility of donors and the medical conditions of recipients before making any connections. This would include verifying the donor's blood type, medical history, and any recent infections, and confirming the recipient's medical condition and need for plasma.

5. Privacy and Security: The application would ensure the privacy and security of user data, including compliance with data protection regulations such as GDPR and HIPAA. User data would be encrypted and stored securely, and access to user data would be restricted to authorized personnel only.

Overall, the proposed system would provide a more efficient and effective way to connect plasma donors with those in need, improving health outcomes and potentially saving lives. The system would be accessible to all users, scalable to handle a large number of users and connections, and would prioritize user privacy and security.

# IV. ARCHITECTURE

An architecture is an representation of a system, organized in a way that supports reasoning about the structures and behaviours of the system. A system architecture can consist of system components and the sub-systems developed, that will work together to implement the overall system.

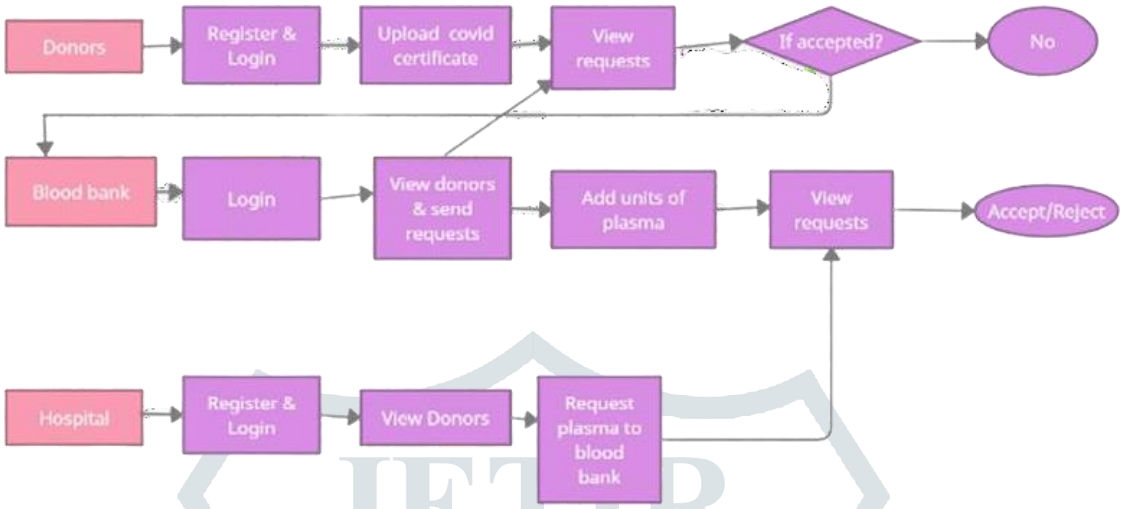


**Figure 3.1: Architecture of the Model.**

# V. RESULTS

After running the code, the URL is displayed and the user needs to paste the URL into the browser. At the end of the URL, you need to add the donor login to open the donor page, b-bank login for the Plasma bank page, and hlogin for the hospital page. Donors who wish to donate plasma can donate by uploading their COVID19 recovery certificate on the donor's page. If the donor is new, they must register before log in. If the donor is an existing user they need to login. Username and e-mail provided at the time of registration. After the donor login to the page, the website will display as below.

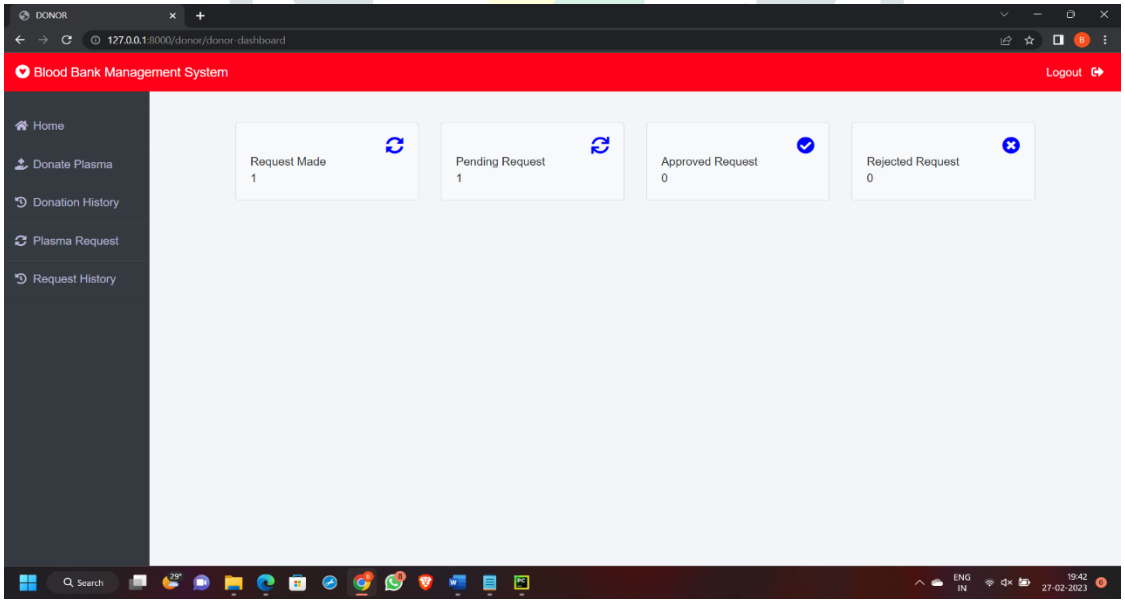


Fig 4.1: Donor View profile page

Only one admin for plasma bank after admin login to the page he can see the existing donors in the blood donor view page. Donors who have uploaded a certificate of recovery can be seen on this page, Plasma banks can view their details and make requests to specific donors.

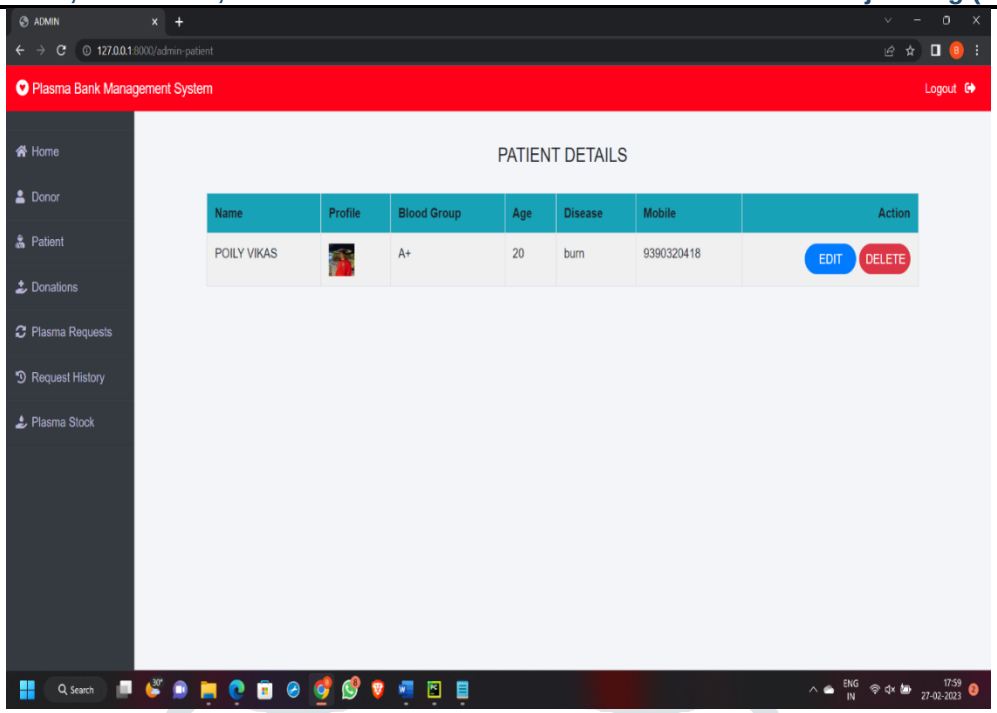


Fig 4.2: Patient Details

Only one admin for Plasma bank after admin login to the page he can see the patient details in the admin view page. Plasma banks can view their details and disease

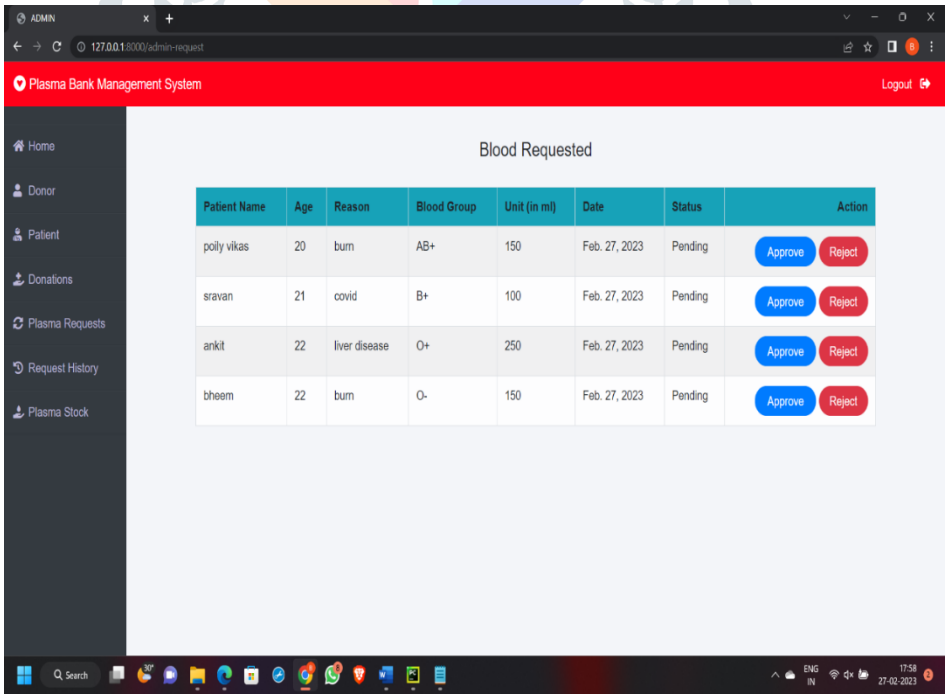


Fig 4.3: Plasma Bank Blood request

Once the request is sent to a donor from the Plasma bank, Donor can see the requests in the donor view requests page.

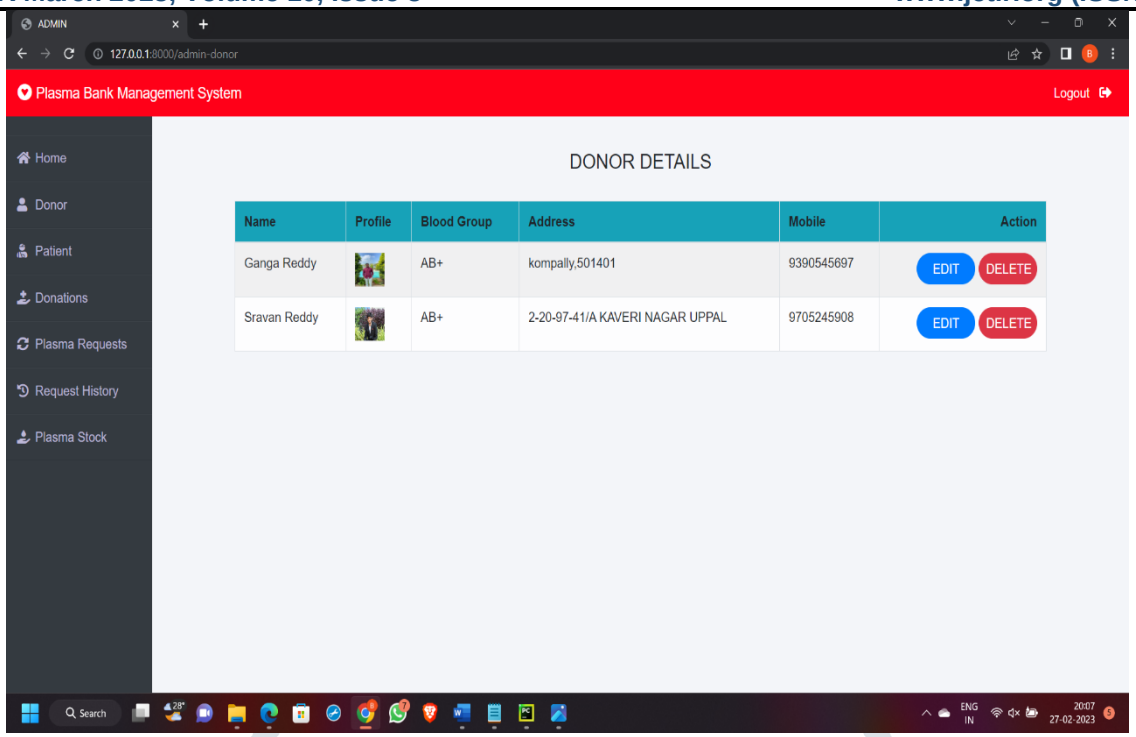


Fig 4.4: Plasma bank can view donor details

Once the request is sent to a donor from the Plasma bank, Donor can see the requests in the donor view requests page.

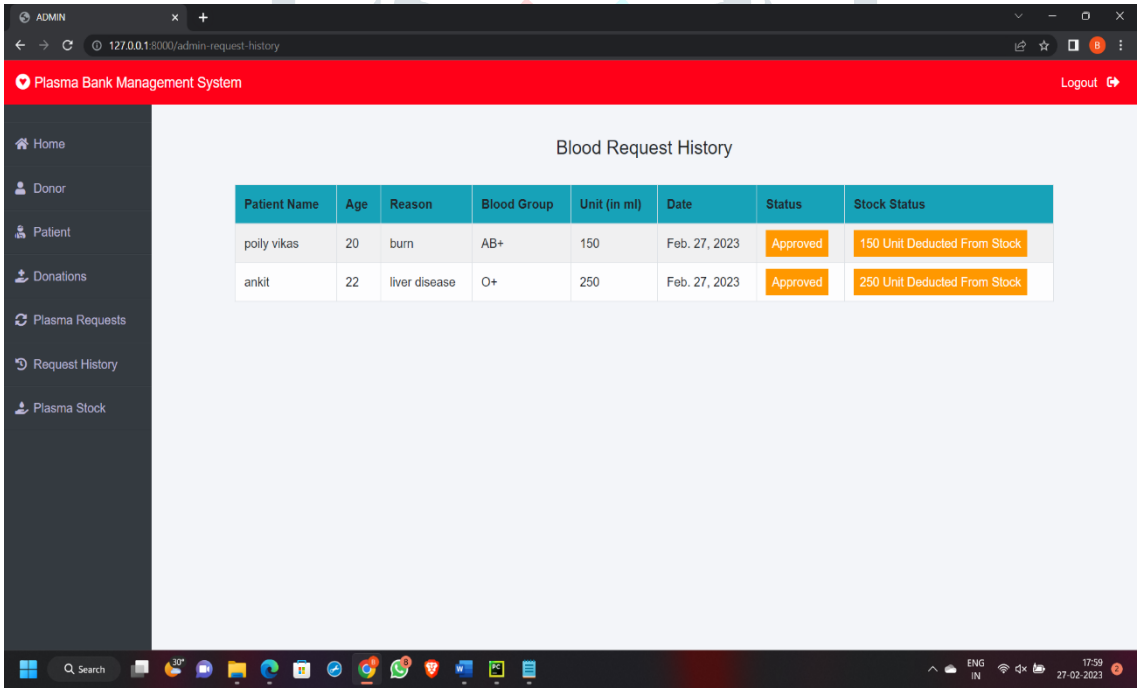


Fig 4.5: Plasma Bank can view Request History

The hospital can see the status of the Plasma bank. If the Plasma bank approves the hospital's request, after the request is approved, The status will show as completed.

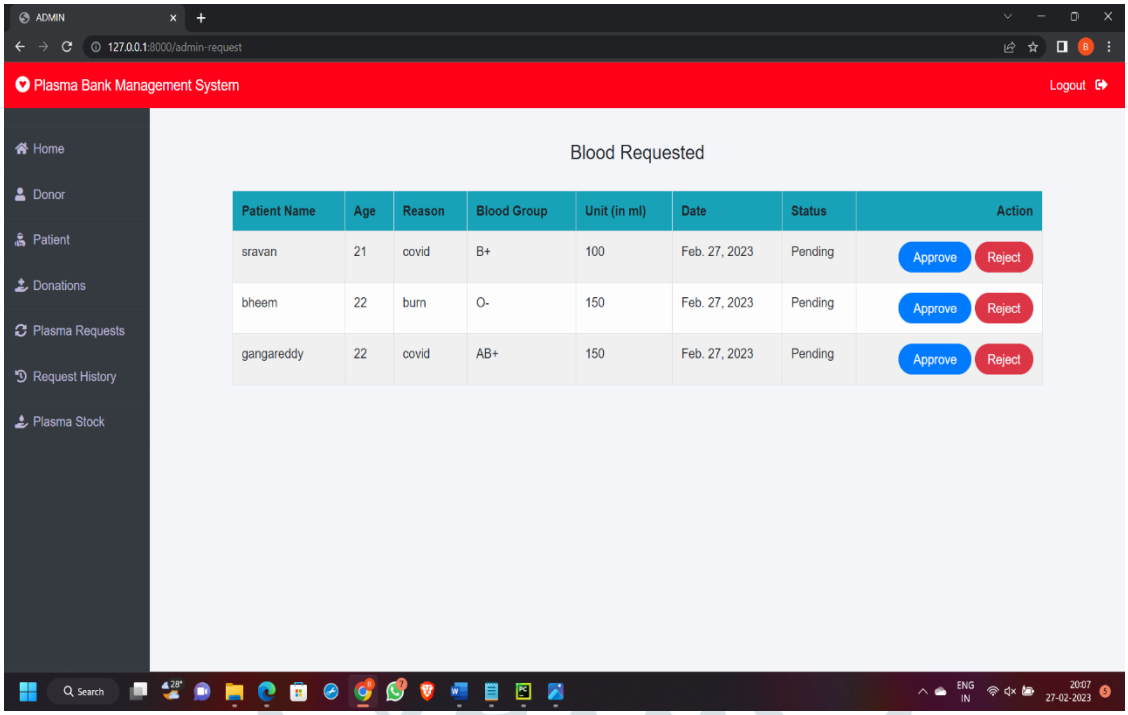


Fig 4.6: Plasma bank can view request Page

The plasma bank can see the hospital's request and the Plasma bank can approve or reject the request

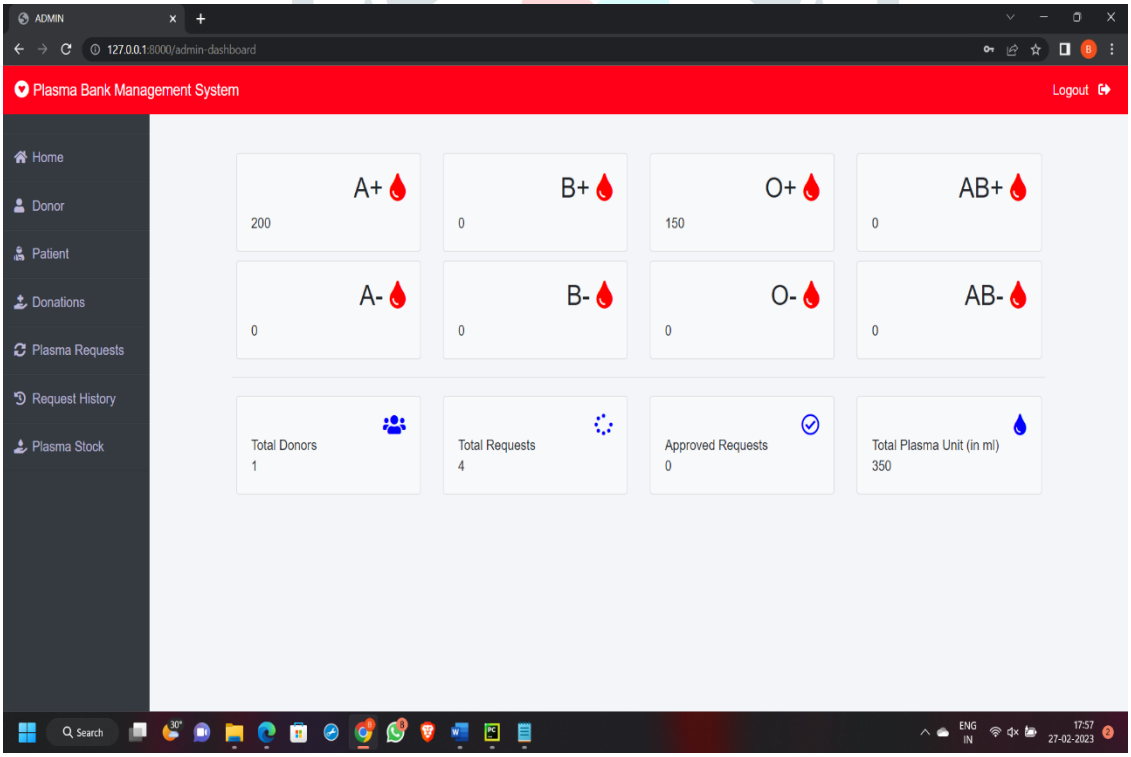


Fig 4.7: Plasma stock available in Plasma bank

## VI. CONCLUSION

Plasma is the yellow liquid part of the blood that contains antibodies, Antibodies are proteins made by the body in response to infection. People who have fully recovered from COVID-19 for at least two weeks are encouraged to consider donating plasma, Which may help to save the lives of other patients. Because you fought the infection, your plasma now contains COVID-19 antibodies. These antibodies provided one way for your immune system to fight the virus when you were sick, so your plasma may be able to be used to help others fight off the disease. Individuals must have a prior diagnosis of COVID-19 documented by a laboratory test and meet other donor qualifications. Individuals must have complete resolution of symptoms for atleast 14 days prior to donation. A negative lab test for active COVID-19 disease is not necessary to qualify for donation.

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