

# Plasma Providing System

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**Abstract-Plasma donation is a way for individuals to contribute to the healthcare system and potentially save lives. To become a plasma donor, one can contact their local blood donation center or hospital to inquire about their plasma donation program. Eligibility criteria such as age, weight, and general health requirements may need to be met, and a screening process may be necessary to ensure the safety of the plasma. For those who have recovered from COVID-19, their plasma may contain antibodies that could help others fighting the virus. In this case, they can inquire about their local blood donation center or hospital's convalescent plasma donation program. Overall, becoming a plasma donor can make a significant impact on the lives of others. Our Project is web-based application that enables individuals who want to donate the Plasma to help the needy. The main objective of developing the system is gather all donors under a single roof, and encourage to donate Plasma. The implementation of this project will be very useful to the society.**

**Keywords-Python, Django, HTML, CSS.**

## INTRODUCTION

Plasma Providing System: - A Plasma donation occurs when a person voluntarily has Plasma drawn and used for transfusions and/or made into pharmaceutical medications by a process called fractionation (separation of whole-Plasma components). Donation may be of whole Plasma, or of specific components directly (the latter called apheresis). Plasma banks often participate in the collection process as well as the procedures that follow it.

There are many reasons patients need Plasma. A common misunderstanding about Plasma usage is that accident victims are the patients who use the most Plasma. Actually, people needing the most Plasma include those: Being treated for cancer, undergoing orthopedic surgeries, undergoing cardiovascular surgeries, being treated for inherited Plasma disorders.

There are many private sectors as well as NGOs who organize Plasma Donation Camps. One can donate

the Plasma in Hospitals also. The safest Plasma donors are voluntary, non-remunerated Plasma donors from low-risk populations. The World Health Organization's goal is for all countries to obtain all their Plasma supplies through voluntary unpaid donors, in accordance with World Health Assembly resolution 28.72, which was adopted back in 1975.

The aim of developing Plasma Donation Management System is to create an efficient system for the donors, where they can get ideas about ongoing Plasma Donation Camp timing, and also can get ideas about the future Plasma donation Camps in order to plan a date for donating Plasma as per their convenience.

## RELATED WORK

Chaudhary et al. (2020) describe the development of an online system for managing plasma donor information. The system was designed to address the challenges faced by blood banks in managing their donor databases and ensuring compliance with regulatory requirements. The authors describe the requirements of the system, including secure data storage, tracking of donor eligibility and deferral status, and management of donation appointments. The system was developed using open-source technologies, including PHP, MySQL, and Bootstrap. The architecture of the system consists of a web-based interface for managing donor information, a database for storing donor data, and an administrative interface for managing the system. The authors describe the features of the system in detail. The development of an online plasma donor management system is an important step forward in the management of plasma donor information. It allows blood banks to collect and store donor information securely, including demographic data, medical history, and donation history. Donors can register and provide information about their plasma donation history, and the system includes features for tracking donor eligibility and deferral status, as well as managing donation appointments. The

system also includes features for managing blood inventory, including tracking the volume of collected plasma and monitoring expiration dates.

The authors emphasize the importance of compliance with regulatory requirements, and describe the measures taken to ensure that the system meets industry standards. The system has the potential to increase the number of plasma donations and improve the quality of donated plasma. The authors conclude by noting that the development of an online plasma donor management system represents an important step forward in the management of plasma donor information. They emphasize the potential benefits of such a system for improving the efficiency and accuracy of the plasma donation process, and for ensuring compliance with regulatory requirements. They note that the system has the potential to improve the quality of plasma donations and to increase the number of donors available to help patients in need.

A web-based platform for connecting convalescent plasma donors with COVID-19 patients" by Huang et al. (2020)

In this paper, it is a web-based platform for connecting convalescent plasma donors with COVID-19 patients. The platform consists of a web-based interface for potential donors to register and provide their eligibility information, and for patients to search for potential donors and request plasma donations. The platform includes a database of potential donors, searchable by location and blood type, and features for tracking donation history, including the number of donations made by each donor and the dates of their most recent donations. The authors note the urgent need for convalescent plasma during the COVID-19 pandemic and the challenges faced by blood banks in identifying and recruiting potential donors. The authors note that the development of a web-based platform for connecting convalescent plasma donors with COVID-19 patients is an important contribution to the management of plasma donor information and the efficient distribution of donated plasma.

The platform complies with data privacy regulations and all donor and patient information is stored securely and is accessible only to authorized personnel. A survey of users was conducted and the results showed that users found the platform easy to use and useful for connecting donors with patients. The authors note that the platform has the potential to improve the efficiency of the plasma donation process and to increase the number of donors

available to help COVID-19 patients. They also note that the platform represents an important step forward in the management of plasma donor information, and that it has the potential to be adapted for use in other contexts. In conclusion, the development of a web-based platform for connecting convalescent plasma donors with COVID-19 patients is an important contribution to the management of plasma donor information and the efficient distribution of donated plasma.

Mobile application for plasma donor management .Author: Katiyar A., Kumar, R.

This paper "Mobile application for plasma donor management" by Katiyar et al. presents the development of a mobile application to manage convalescent plasma donations during the COVID-19 pandemic. The application aims to address the challenges faced by blood banks in identifying and recruiting potential donors, managing donor eligibility, and tracking donation history.

The application was developed using the Ionic framework, a popular framework for developing cross-platform mobile applications. The application includes features such as donor registration, eligibility management, and donation tracking. Donor registration allows potential donors to provide their COVID-19 diagnosis and recovery status, blood type, and location. Donors can also provide information about their medical history and medications they are taking. This feature helps blood banks identify and recruit eligible donors more efficiently.

The application's eligibility management feature uses predefined criteria to determine whether a potential donor is eligible to donate convalescent plasma. This feature ensures that only eligible donors are recruited, reducing the risk of transmitting infections and ensuring the safety of donated plasma.

Donation tracking is another essential feature of the application. By keeping track of the number of donations made by each donor and the dates of their most recent donations, blood banks can ensure that donated plasma is used effectively and efficiently. This helps to ensure that plasma is distributed to those who need it most, reducing waste and increasing the number of people who can be helped. The application's user interface is designed to be user-friendly, making it easy for donors to provide their information and blood banks to manage donor information. The application is designed to be

accessible from both desktop and mobile devices, providing flexibility for users.

To evaluate the effectiveness of the application, Katiyar et al. conducted a survey of users. The survey showed that users found the application easy to use and useful for managing donor information and tracking donation history. Users also reported that the application helped to increase awareness of the need for convalescent plasma and encouraged them to donate.

In conclusion, the development of a mobile application for managing convalescent plasma donations is an important step forward in the management of plasma donor information and the efficient distribution of donated plasma during the COVID-19 pandemic. The application has the potential to improve the efficiency of the plasma donation process, increase the number of donors available to help COVID-19 patients, and ensure the safety and efficacy of donated plasma.

Plasma donation and life saver-Plasma donation app . Author: M.R. Anish Hamlin, J. Albert Mayan.

“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, Plasma 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 Plasma 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

A standard compliant Plasma Bank Management System with enforcing mechanism. Author: Amarjeet Singh Cheema, Siddharth Srivastava

Plasma is a non-replenish-able entity, the only source of which are humans. Timely availability of quality Plasma is a crucial requirement for sustaining the healthcare services. Therefore, maintaining quality of Plasma and identification of Professional Donors is a major responsibility of Plasma banks. NACO (National AIDS Control

Organization) and NABH (National Accreditation Board for hospitals and Healthcare Providers) have provided guidelines for ensuring the quality of Plasma and identifying Professional Donors. Moreover, manually monitoring standards and identifying professional donors is a challenging job. In this work, we develop a standard compliant Plasma Bank Management System with a novel rule based enforcing mechanism. The developed system is an end-to-end solution for not only managing but implementing enforcing strategies and providing decision support to the users. The proposed Plasma Bank Management System has been implemented across 28 Plasma banks and a major hospital. It has been found extremely effective in streamlining the workflow of Plasma banks

### EXISTING SYSTEM

The most recent updates cannot be uploaded or downloaded. No usage of remote access or web services. Danger of data management errors when the project is still under development. Reduced Security. There is insufficient cooperation between users and various applications. Fewer Users - Pleasant. Many people are eager to donate plasma and are in need of plasma. However, there is no friendly plasma donation sites in real time.

#### Drawbacks

- ✓ The application may have a small user base, making it difficult to find donors and recipients.
- ✓ The application may provide a poor user experience, making it difficult for users to navigate and use the application.
- ✓ Donor profiles may be incomplete or inaccurate, making it difficult to find suitable donors or recipients.
- ✓ Users may lack trust in the application or the plasma donation process, which may lead to a drop in donor participation.

#### Proposed System

- ✓ A strong password mechanism will be implemented to ensure the security of donor information.
- ✓ The application will provide a transparent view of the donation process and enable donors to track their donation history and status.

- ✓ The plasma providing system will have an intuitive user interface that is easy to navigate.
- ✓ To avoid data redundancy, the plasma providing system will store donor information in a centralized database.

#### Merits

- ✓ The implementation of a strong password mechanism will improve the security of donor information and reduce the risk of unauthorized access.
- ✓ The navigational improvements will make the application easier to use for donors, reducing the time needed to navigate through the system.
- ✓ Increased Efficiency: It will help streamline the donation process, making it faster and more efficient for donors to donate plasma.
- ✓ The centralized database will ensure that donor information is up-to-date and free from data redundancies, improving the accuracy of the system.

#### MODULE DESCRIPTION

A module is a Hardware and software component or part of a program that contain one or more routines.

#### HTML

HTML, or Hyper-text Markup Language, is a language used to create web pages and web applications. It provides a standard way to structure content on the web by defining elements such as headings, paragraphs, images, links, and other components that make up a web page. These elements can be styled and positioned using CSS (Cascading Style Sheets) and made interactive using JavaScript.

HTML uses a syntax of opening and closing tags to define elements and their content. For example, the <p> tag is used to define a paragraph, while the <img> tag is used to define an image. The content between the opening and closing tags is what is displayed on the web page. HTML also provides attributes, which can be used to specify additional information about an element, such as the source of an image or the URL for a link.

One important consideration when using HTML is to use semantic markup, which means using elements that accurately describe the content they contain. This not only makes the document more readable and accessible for humans, but also for

machines and search engines that may be crawling the web page.

Overall, HTML is a foundational language for building web pages and web applications, providing a standardized way to structure content and make it accessible to users across the web.

#### CSS

CSS, or Cascading Style Sheets, is a style sheet language used to describe the presentation of HTML or XML documents. It provides a way to control the layout, colors, fonts, and other visual aspects of a web page, allowing web developers to create visually appealing and consistent designs.

CSS works by defining rules that apply to elements on a web page. These rules consist of selectors, which identify the elements to which the rules apply, and declarations, which specify the style properties to be applied to those elements. For example, a CSS rule might target all <p> elements on a web page and specify that they should have a font size of 14 pixels and be displayed in the color blue.

CSS also provides a variety of layout and positioning tools, such as the ability to float elements, position them relative to their parent container, and create flexible grid layouts. It also includes support for responsive design, allowing web pages to adapt to different screen sizes and devices.

One of the key benefits of CSS is that it allows for the separation of presentation and content, which can make web development more efficient and scalable. By separating the visual styling from the HTML structure, changes to the design can be made without affecting the underlying content. Additionally, CSS can be used across multiple pages on a website, reducing the need for redundant styling code.

Overall, CSS is a powerful tool for creating visually appealing and consistent web designs. By using CSS to control the presentation of HTML and XML documents, web developers can create engaging and user-friendly web pages that work across a wide range of devices and screen sizes.

#### PYTHON

Python is a high-level, interpreted programming language that is popular for a wide range of applications, including web development, data analysis, scientific computing, and artificial intelligence. It is known for its simplicity, readability, and versatility, making it a popular

choice for beginners and experienced developers alike.

Python uses a syntax that emphasizes code readability and clarity, with a focus on using white space to delimit code blocks instead of braces or other symbols. It also includes a large standard library that provides functionality for many common programming tasks, as well as a variety of third-party libraries and frameworks that extend its capabilities.

Python supports a wide range of programming paradigms, including procedural, object-oriented, and functional programming. It also includes support for dynamic typing, which allows variables to be assigned values of any data type at runtime, and automatic memory management, which makes it easier to write reliable and efficient code.

One of the key benefits of Python is its ease of use and readability, which can make it faster to develop and easier to maintain code. Additionally, Python's flexibility and wide range of libraries and frameworks make it suitable for a wide range of applications, from web development to scientific computing and beyond.

Overall, Python is a popular and versatile programming language that is known for its simplicity, readability, and flexibility. Whether you are a beginner or an experienced developer, Python can be a powerful tool for building applications and solving complex problems

## DJANGO

Django is a web framework written in Python that provides a set of tools and libraries for building web applications quickly and efficiently. It follows the model-view-controller (MVC) architectural pattern, which separates the application's data, user interface, and control flow into distinct components. Django's Object-Relational Mapping (ORM) system allows developers to define their application's data models using Python code, and then automatically generate the necessary database tables and queries. Additionally, Django includes a built-in admin interface that provides a secure way to manage the application's data through a web interface.

Other features of Django include support for user authentication, URL routing, middleware, and other common web development features. Django also emphasizes re-usability, providing a wide range of reusable components such as authentication, user management, and form handling, which can be easily integrated into new or existing applications.

Overall, Django is a powerful and flexible web framework that allows developers to build complex web applications quickly and efficiently by providing a set of tools and libraries that promote best practices and emphasize re-usability.

## RESULTS AND DISCUSSION

The plasma providing system is a web-based platform that connects plasma donors with individuals in need of plasma transfusions. The application follows the Model-View-Controller (MVC) architectural pattern, which separates the application's data, user interface, and control flow into distinct components. This makes it easier to manage the codebase and maintain the application in the long term.

The application uses Python as the primary programming language, with the Django framework used to handle user authentication, session management, and database management. It is used to define data models using Python code and generate the necessary database tables and queries. Additionally, Django's built-in admin interface provides a secure way to manage the application's data through a web interface.

HTML is used to structure the content of the application's web pages, and CSS is used to style the web pages consistently across the entire application. This helps to ensure that users can easily navigate the application, find what they need, and interact with the different features of the application. The application has been designed to make it easy for donors to sign up and provide their information, and for recipients to find available donors based on their location and blood type.

The plasma providing system emphasizes user experience, making it user-friendly and easy to navigate. Python is used to handle the backend processing, such as user authentication and session management. The Django framework provides built-in authentication and session management tools that help ensure that user data is secure and that users have a seamless experience while using the application.

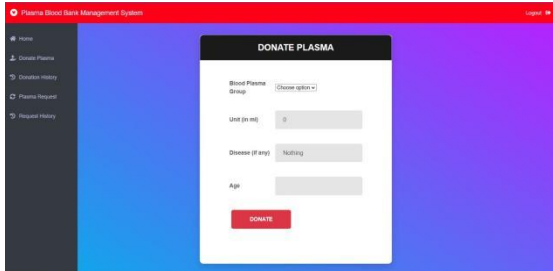
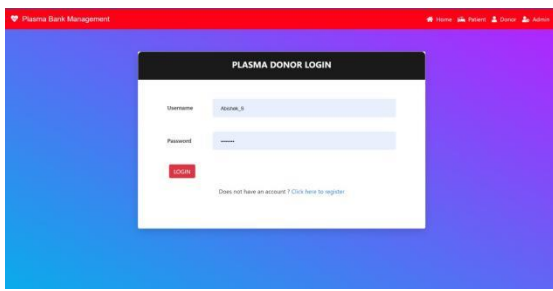
Overall, the plasma providing system is a powerful and user-friendly platform that connects donors with individuals in need of plasma transfusions. The use of Python, HTML, CSS, and Django has made it possible to build a reliable and scalable application that has the potential to save lives and make a real difference in the world. The application has a built-

in admin interface that provides a secure way to manage the application's data through a web interface, making it easy to manage and maintain the application.

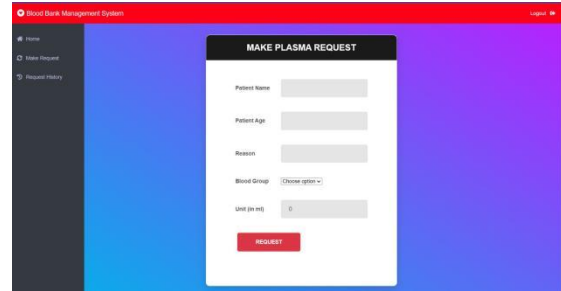
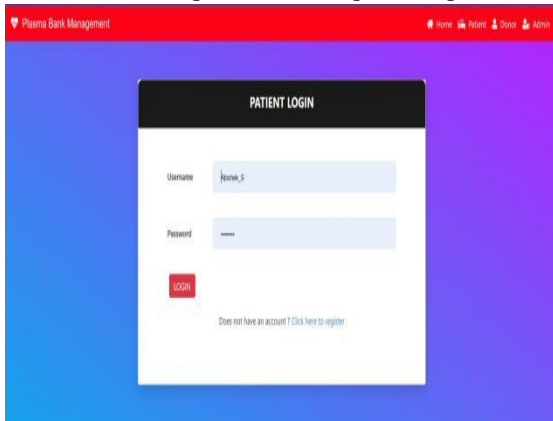


The above is home page of plasma providing system where we can see admin, patient and donor.

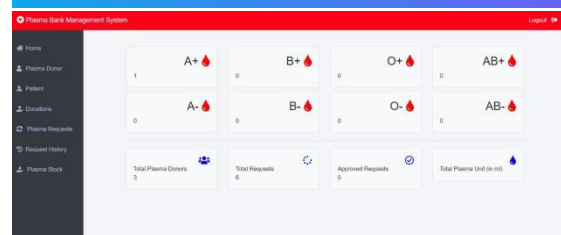
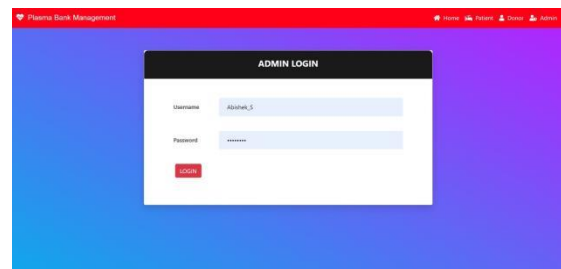
By clicking donor, it will proceed to donor's login where the new user can register if not user can directly can login by entering password & username. After login we can see donor dashboard where they can donate plasma and they can also see donation history.



Similar to the donor dashboard there also patient dashboard where patients can request for plasma.



If the donor is available while notify the patient. Plasma providing system has an admin page where admin can plasma request and who are willing to donate. In admin dashboard we can see plasma stock where the admin can update t how many unit of plasma is available.



## CONCLUSION AND FUTURE WORK

The most crucial component to saving a life is plasma. We can save a great deal of lives by giving plasma. Also, it's critical to keep in mind that every single one of us may require plasma at some point in our life, making plasma donation a fundamental civic responsibility. Those in today's busy world who want to donate plasma but are unable to can do it by planning it using our application while sitting at home and with only one click. People will be able to give Plasma using this application, causing radical changes to the medical system. It can also be beneficial for people to understand the advantages of plasma donation and how their modest gift can enable one person to save his or her life as quickly and efficiently as possible.

Not only does the application provide convenience to donors, but it also allows for a more organized and efficient donation process. By optimizing registration process, medical facilities can better

prepare for incoming donations and ensure that they are used efficiently.

Moreover, the plasma providing system also has the potential to increase awareness and education around the importance of plasma donation. By providing easy access to information about the donation process and the benefits of plasma donation, the application can encourage more people to become donors and contribute to their community.

In conclusion, the plasma providing system project represents a significant step forward in improving the blood donation process and saving more lives. By using technology to streamline the donation process and increase awareness around the importance of plasma donation, we can make a positive impact on society and help ensure that everyone has access to the critical medical treatments they need.

The future scope for plasma providing system project is vast and can have a significant impact on the fight against COVID-19 and other infectious diseases. Here are some potential future developments for this project:

- ✓ Improved plasma collection methods: The development of new technologies for plasma collection, such as automated collection systems, could increase the efficiency and safety of the plasma donation process.
- ✓ Development of targeted therapies: As our understanding of COVID-19 and other infectious diseases improves, it may be possible to develop targeted therapies that use specific antibodies to treat the disease. Plasma donation could be an important source of these antibodies
- ✓ Increased collaboration: International collaboration and coordination will be critical in advancing the plasma providing system project. Greater collaboration between healthcare organizations, research institutions, and plasma collection centres could help to streamline the plasma donation process and improve access to convalescent plasma therapy.
- ✓ Public education and awareness: Continuing to educate the public about the importance of plasma donation and its potential impact on the fight against COVID-19 and other infectious diseases could lead to increased donor participation and better outcomes for patients.

Overall, the future scope of the plasma providing system project is promising, and continued investment in research and development could lead to new therapies and treatments for infectious diseases.

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