

## **PLASMA DONAR APPLICATION**

Application Name: Plasma Donor Application

A cloud-based application which efficiently collects people's plasma type and alerts the donors when in need of the same plasma type.

### **Literature Review**

The major contribution of Human Sciences in the understanding of the whole blood donation behaviour has been through the study of individuals' motivations and deterrents to donate. However, if whole blood 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.

In the initial period of the outbreak, there was no proper channel for inviting plasma donors. As the cases went high, the demand for plasma grew, and very few recovered patients were willing to donate. An appropriate and efficient method is necessary for not just finding donors but the most efficient one. Studies and research show that the level of antibodies is influenced by many donor-related factors, such as the severity of the disease, age, and many more. It is not easy to set a rule-based system for the prediction of antibody level. Hence, the best and feasible way is to use data-driven methods.

Aman Shah et al. (2021) described a technique for administering a blood bank database using a Microsoft Structured Query Language Server to assist blood bank supervisors in delivering better service to blood donors while minimizing waste. The method aims to efficiently act as an intermediary between donor, blood bank, and receiver by constructing an adequate database [1]

Devanjan K. Srivastava et al. (2021) presented a dynamic website based on the Blood Donation Management System, with the overall system comprised of a combination of web-based user interfaces and SQLite databases. Anyone with a web browser and an internet connection may access a Django-powered website from any location. The suggested system would allow people to register as blood donors and make themselves available anytime their blood type is needed, as well as a search feature to find others who are willing to donate. After a donor registers, their health-related information is updated in the blood management system database, which is accessible to everyone [2].

Guhdar Youcif Izadeen et al. (2021) proposed a data-integration-based blood bank supervision approach that integrates SMS Reminders, which provide emergency support for people who don't even have internet connectivity. The database maintains blood banks that include all of the appropriate data regarding applicants and recipients [3]

KS Wagh et al. (2019) presented a dynamic website with a mobile application based on blood donor optimization utilizing chromosomal coding, the fitness function, and the genetic operator, which provides a method for interaction between the patient and the

blood donor to make blood more accessible. The genetic algorithm is used to optimize the donor based on the closest location and to choose the fittest donor, which is based on the parent-offspring paradigm, and some other constraints are imposed on the donor that must be satisfied by the donor[4].

Aderonke Anthonia Kayode (2019) suggested a web- and Android-based blood bank information retrieval system in which a web app updates publicly available blood info and a mobile software search for blood supply among enrolled blood banks. The system includes a component that allows registered blood banks to use the app to submit a request for blood donation to enrolled blood donors. The blood bank information system was developed in response to a need to facilitate locating blood supplies or an interested donor easier and more time-efficient [5].

Lilik et al. (2018) created an E-Blood Bank App for Organizing and Ordering Blood Donations, which provides real-time bloodstock information and links it to the Blood Transfusion Unit.

Akkas et al. (2015) proposed an interactive Blood Donation Management System, which is a web application with an accompanying mobile application that is intended to serve as a communication medium between patients and blood donors using Visual Studio and My SQL techniques. The mobile application constantly updates a donor's location because Google Maps is integrated with this application to determine a donor's exact location. The donor could register via email or mobile number, and if there is a request, he/she may receive a notification on the phone near his/her location as suggested by Google Maps [6]

Ming Jiang et al. (2005) developed a blood information management system based on Radio Frequency Identification, which provides a vital service to medical institutions by offering high-quality blood via a systemized blood management process. Radio Frequency Identification (RFID) and Fingerprint Identification are used to reduce human errors, and also a fingerprint sensor is used to improve the credibility of the donor identification process. The traditional method of identifying blood donors is unreliable because the barcode on the blood bag contains less information and cannot be reused, and the bloodmobile cannot transmit real-time data to the blood centre or the lab. The smart label was created to replace the standard blood information system's commonly used barcodes [7].

We propose a cloud based application that provides a real-time solution to the problem of plasma donation.

## **References:**

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