

LITERATURE SURVEY - PLASMA DONOR APPLICATION

Project Title : Plasma Donor Application

Category : Cloud Application Development

Team ID : PNT2022TMID17803

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INTRODUCTION:

Our human body features countless miracles and capabilities that are sometimes quite complicated, and one of those marvels found in our blood is Plasma. Plasma is considered as one of the vital liquid components of blood which contributes over 55% of total blood volume along with water, salts, enzymes, antibodies, and other proteins. Plasma donation is now acknowledged as one of the most pertinent acts that help save numerous lives. The donated plasma can help patients to break free from fatal illnesses such as hemophilia, immunological deficiencies, and other blood disorders. Using the cloud, we can quickly and conveniently access information stored anywhere, at any time. By guaranteeing that our data is constantly available, an internet cloud architecture boosts organizational productivity and efficiency. We are able to link millions of contributors and requestors by converting to cloud information and using a straightforward online web application.

OBJECTIVE:

This project's aim is to provide a consistent yet engaging portal that connects plasma requesters and donors, serving as a seamless medium of interaction that is advantageous to both donors and receivers. The request for plasma will be fulfilled by displaying the available donor list. In case of a request on a particular blood type, the user will be notified by the time of availability.

LITERATURE SURVEY:

[1]” Evaluating plasma holds in the presence of multiple infections” by E. H. Kaplan in 2001

This research broadens the analysis to include numerous illnesses. Given the marginal incidence rates for the infections checked, upper and lower bounds are calculated for important quantities such as the probability of intercepting an infectious but undetected donation, the expected number of infections intercepted per donation, and the net economic benefits of the holding policy.

[2]”Nearest Blood & Plasma Donor Finding: A Machine Learning Approach” by N. Das and M. A. Iqbal in 2020

This study focuses on the development of a platform with clustering algorithms that will work together to deliver the quickest solution to identify a blood or plasma donor. Closest blood or plasma donors of the same group in a certain location can be examined more quickly and efficiently.

[3] ”Convalescent Plasma Therapy: Data-driven approach for finding the Best Plasma Donors” by M N Noorshidha and Dr.G.Aghila in 2021.

The difficulty and difficulties of locating a donor for convalescent plasma treatment are highlighted in the study. It demonstrates how the issue can be resolved through data-driven methods. A classification model is used to determine whether a donor has the required antibody level for donation, and a regression model is used to determine which donors may have higher levels of antibody in their plasma based on their clinical histories.

[4]”A Cross-Platform Blood Donation Application with a Real-Time, Intelligent, and Rational Recommendation System” by J.M. R. J. Maraz, R. Rahman, M. M. U. Hasnain and H. Murad in 2021

In this author's research, they created a real-time, intelligent, and logical recommendation system based on sentiment analysis of user comments, donor response rate, and current geo-location information, and then created a cross-platform application for blood collection and distribution. They created a Bi-directional LSTM-based deep learning model to process and produce features from user feedback. The quality of potential donors'

recommendations has greatly increased.

[5] "A Web-based Blood Bank System for Managing Records of Donors and Receipts"

by M. Kaur et in 2022

The author has developed a comprehensive system that would connect various hospitals, NGOs, and blood banks to assist patients in tough situations. As a result, the HIPPA model serves as a foundation for security breaches. The planned interface will be simple to use and easy to access, providing a quick, efficient, and dependable means to obtain lifesaving blood at no cost.

REFERENCE:

[1]E. H. Kaplan, "Evaluating plasma holds in the presence of multiple infections," in *Mathematical Medicine and Biology: A Journal of the IMA*, vol. 18, no. 3, pp. 215-224, Sept. 2001, doi: 10.1093/imammb/18.3.215.

[2]N. Das and M. A. Iqbal, "Nearest Blood & Plasma Donor Finding: A Machine Learning Approach," 2020 23rd International Conference on Computer and Information Technology (ICCIT), 2020, pp. 1-6, doi: 10.1109/ICCIT51783.2020.9392739.

[3]M. N. Noorshidha and G. Aghila, "Convalescent Plasma Therapy: Data driven approach for finding the Best Plasma Donors," 2021 International Conference on Artificial Intelligence and Smart Systems (ICAIS), 2021, pp. 432-439, doi: 10.1109/ICAIS50930.2021.9396012.

[4]M. R. J. Maraz, R. Rahman, M. M. U. Hasnain and H. Murad, "A Cross-Platform Blood Donation Application with a Real-Time, Intelligent, and Rational Recommendation System," 2021 International Conference on Electronics, Communications and Information Technology (ICECIT), 2021, pp. 1-4, doi: 10.1109/ICECIT54077.2021.9641395.

[5]M. Kaur et al., "A Web-based Blood Bank System for Managing Records of Donors and Receipts," 2022 International Conference on Computational Intelligence and Sustainable Engineering Solutions (CISES), 2022, pp. 459-464, doi: 10.1109/CISES54857.2022.9844389.