

PLASMA DONOR APPLICATION

Problem Statement:

To develop a cloud based application which would take the donor details, store them and inform them upon a request.

Introduction:

During the COVID 19 crisis, the requirement of plasma became a high priority and the donor count has become low. Saving the donor information and helping the needy by notifying the current donors list, would be a helping hand. Traditionally, in order to find a plasma patient, one should look at hospital records and contacting donors who have been recovered. Unfortunately, sometimes those people may not be available at home or would have relocated. As the backup system is weak, this method is not considered as a rapid process to find plasma. In regard to the problem faced, an application is to be built which would take the donor details, store them and inform them upon a request.

LITERATURE REVIEW:

Cloud computing is nothing but internet based computing which made revolution in today's world. It is the biggest innovation which uses advanced computational power and improves data sharing and data storing capabilities. Cloud is a large group of interconnected computers, which is a major change in how we store information and run application. Cloud computing is a shared pool of configurable computing resources, on demand network access and provisioned by the service provider. The advantage of cloud is cost savings. The prime disadvantage is security. The cloud computing security contains to a set of policies, technology controls deployed to protect data, application the associated infrastructure of cloud computing. Blood Donation System is an android based system that is designed to store, process, retrieve and analyse information concerned with the administrative and inventory management within a blood bank. This project aims at maintaining all the information pertaining to blood donors, different blood groups available in each blood bank and helps them to manage in a better way. Aim is to provide transparency in this field, make the process of obtaining blood from a blood bank hassle free and corruption free and make the system of blood bank management effective document is a template.

The following are the references that were referred to gain knowledge:

1. In year 2015, a IEEE paper on A Health-IoT Platform Based on the Integration of Intelligent Packaging, Unobtrusive Bio-Sensor and Intelligent Medicine Box was authored by Geng Yang, Li Xie, Matti Mantysalo, Xiaolin Zhou, Zhibo Pang, Li Da Xu, Sharon Kao-Walter, Qiang Chen, Lirong Zheng. In this paper, an intelligent home-based healthcare platform is proposed and implemented. It involves iMedBox with connectivity, iMedPack with communication capability enabled by RFID, Bio-Patch and SOC. It fuses with IoT. The body-worn Bio-Patch can detect and transmit the users bio-signals to the iMedBox in real time. The only limitations are, comprehensive platform missing. And the Physical size, rigid nature and short battery become limitation for long term use.

2. In 2016, an IEEE paper was authored on Data Mining for Better Healthcare: A Path towards Automated Data Analysis? By Tania Cerquitelli, Elena Baralis, Lia Morra and Silivia Chiusano. This paper addresses the mining activity from the medical database perspective. The mining system should be able to devise which knowledge could be most interesting to the user extract actionable knowledge from large medical dataset with minimal user intervention. System should be capable of yielding actionable knowledge extracting manageable sets. Large parameter spaces need to be explored at abstraction level to envision a system capable of evaluating and comparing many data-mining technique configurations at a time.

3. In 2015, a IEEE paper on Mobile Based Healthcare Management using Artificial Intelligence was authored by Amiya Kumar Tripathy, Rebeck Carvalho, Keshav Pawaskar, Suraj Yadav, Vijay Yadav. In this paper, the health-care management system is proposed which will consist of mobile based heart rate measurement so that the data can be transferred and diagnosis based on heart rate can be provided quickly with a click of button. The system will consist of video conferencing to connect remotely with doctor. The system will also consist of Doc-Bot and an online Blood Bank. In this implemented project, heart rate calculation differs from actual one due to noise present in input signal. So the performance is not efficient in practical. Methodology used Clustering, Text Mining, Pattern Matching, Support Vector Machine, Partitioning Algorithm and DonorHART tool used in collecting donor reaction information. Limitations are Difficulty in handling emergency situation and No proper security for personal details misuse.

PLASMA DONOR APPLICATION USING FUNCTION-AS-A-SERVICE IN AWS:

The main objective of this application is to design a user-friendly web application. This application tries to reduce mortality or help those affected by COVID19 by donating plasma from patients who have recovered without approved antiretroviral therapy planning for a deadly COVID19 infection. It should be noted that plasma therapy is an experimental approach to treat those COVID-positive patients and help them recover faster. This therapy is considered reliable and safe. If a particular person has fully recovered from COVID19, they are eligible to donate their plasma.

In this plasma donor application, persons who wants to donate plasma, can simply upload their covid19 traced certificate and can donate the plasma to the blood bank. On the other hand, the blood bank can invite for the donor and once the donor has accepted the request, the blood bank can add the units they need. At the same time, the hospital can also send the request to the blood bank that urgently needs the plasma for the patient and can take the plasma from the blood bank.

In this system, on receipt of the plasma from the donor, the blood bank verifies the donor's certificate and can make a request to the donor. If the donor accepts the request, they can add the required number of units they required. The hospital can send a request to the blood bank that needs the patient's emergency plasma and to get the plasma from the blood bank.

Following are the sequence of events that will happen during the function of this application.

- On giving the URL to run the application, the system will ask for login details.

- A new user need to register for this and a old user can use the same credentials.
- The blood bank Admin can view the existing and valid donor details and can make request to specific donors.
- Donors also can view these requests from their login, and on the acceptance of any request, the blood bank checks the status of this request.
- The status will change as “pending” or “approved” based on the acceptance and rejection of the request by the donor.
- The blood bank acts as an interface between the hospital and the donor, and there is no direct communication between the donor and the hospital.

The main advantage of this application is the centralized platform for the interaction of donors, blood bank and hospital. Further, it provides an authentication phase in addition to the decision options by the donor and the hospital. Also, the blood bank can provide this service to other hospitals also. In spite of many advantages, this application comes with some drawbacks also. This application is not able to verify the genuineness of the user automatically. That is, it requires various entries and phases by the users to verify their integrity. Furthermore, it requires an active internet connection throughout its operation, which is considered as a constraint for this application.

Plasma Donation Website using MERN stack:

The main goal of this project is to make it easier for the COVID-19 patients to get a plasma donor easily as well as donate plasma if they have recovered. The system targets two types of users: the people who want to donate plasma and the people who need plasma. The user can also view the total active cases, nearby vaccine centers, hospitals address.

The user can also view the total active cases, recovered cases, vaccine centers in their area, hospital location, and helpline number.

The following technology have been used: Frontend : HTML, CSS, React.JS Backend : NodeJs, Express.Js Database : MongoDB

Advantages

- Speed : This website is fast and offers great accuracy as compared to manual registered keeping.
- Maintenance : Less maintenance is required
- User Friendly : It is very easy to use and understand. It is easily workable and accessible for everyone.
- Fast Results : It would help you to provide plasma donors easily depending upon the availability of it.

Disadvantages

- Internet : It would require an internet connection for the working of the website.
- Auto- Verification : It cannot automatically verify the genuine users.

Enhanced Mobile Application Development For Plasma, Mother's Milk And Blood Banks

This paper propose an enhanced mobile application for Plasma, Mother's milk and Blood banks to administrate their users and resources easily and enhance security for information stored on the databases.

The following are this project's objectives :To provide a common platform for Plasma, Mother's milk and Blood Donors, Recipients and Health care system,To track the location of Donors using Maps and Send quick messages via short message service,To advertise and effectively manage Blood/Plasma/Mother's milk camps, To provide scalability and ensure security, To provide health tips and guidelines about PMB donation.

The planned system consists of the subsequent modules: Admin Module ,PMB Bank Module , Donor Module , Recipient Module.

This project is based on Android OS version 6.0+ developed in Android Studio, which enables developers to create high quality applications for Android devices.It is an Android application that uses the Firebase & 000webhost.blogs (web cloud) real-time database to quickly and efficiently search, collect and sort data for each Plasma, mother's milk and blood donor and users.

REFERENCES:

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