LITERATURE SURVEY

Paper Title : Finding the nearest Plasma Donors using Dijkstra Algorithm.

Authors : Soyed Mostafizur Rahman

Publication : IRJMETS, August 2020, Volume:02, Issue:08
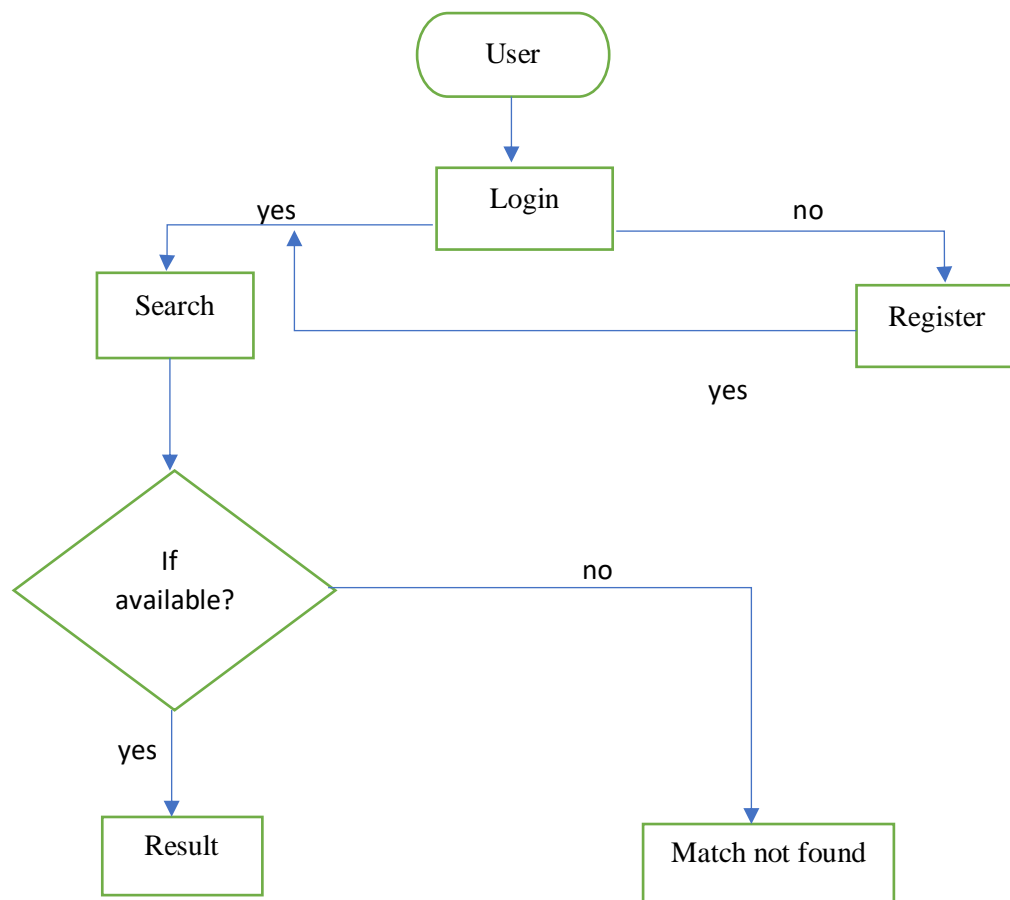
Methodology : Dijkstra Algorithm.

Dijkstra algorithm remains a unique solution of that optimal path finding to a specific single root. Both addressed and undirected graph with nonnegative weight values is estimated during the algorithm. Those graph's requirements are compared to obtain the optimal outcome. It orders review all unvisited node and updates the optimal outcome. It becomes estimated at the smallest distance among the plasma seekers and donors practicing the Dijkstra algorithm. Here, it is used a single cause all pairs Dijkstra algorithm to determine the minimum length from the plasma seeker.

Analyse the following opinions:

• Node: Each registered user in the system including active GPS.

• Edge: That relationship within the plasma donors and seekers.

• Starting/Source Node: The plasma seeker.

• Weight: The distance between the users.

Steps of this algorithm are:

1. Set all donor distance with incessant and that seeker by zero.

2. Refresh the advantage of the length of the donor's distance by adding the distance with the weight of that particular donor.

3. Update the distance of a donor if the length of a node is less than the current length.

4. Repeat steps 2 and 3 until all donor's distance reaches its minimum length from plasma seekers.

5. Balance the plasma group of the donors by seeker's collection.

6. Register the plasma donors with minimum length from plasma seeker of met blood group.

```
                          ┌─────────────┐
                          │    User     │
                          └─────────────┘
                                 │
                                 ▼
              yes          ┌───────────┐          no
        ┌──────────────────│   Login   │──────────────────┐
        │                  └───────────┘                  │
        ▼                                                  ▼
   ┌──────────┐                                      ┌──────────┐
   │  Search  │◄─────────────────────────────────────│ Register │
   └──────────┘                                      └──────────┘
        │                                              yes
        ▼
     ╱╲
    ╱  ╲
   ╱ If  ╲            no
  ╱available?╲──────────────────────┐
  ╲          ╱                       │
   ╲        ╱                        │
    ╲      ╱                         │
     ╲    ╱                          │
   yes │                            │
       ▼                            ▼
  ┌──────────┐              ┌─────────────────┐
  │  Result  │              │ Match not found │
  └──────────┘              └─────────────────┘
```

Flow chart

Paper Title : BDoor App-Blood Donation Application using Android Studio.

Authors : S Periyanayagi ; A Manikanda ; M Muthukrishnan ; M Ramakrishnan.

Publication : NCAIEV21, June 2021, Volume:24, Issue:03

Methodology : Decision Tree algorithm.

A decision tree is a machine learning algorithm that has a tree structure, similar to a flowchart, with each internal node referred to as a non-leaf node. Each branch reflects a specific method outcome, and each leaf node, also known as a terminal node, contains a class label or distribution. In a tree, the root node is the highest node. The decision trees may quickly be modified to rules of grouping. J48 algorithm and WEKA tool have been Incorporated with B Door Application. This enables authorized institutions such as the hospital, non-governmental organizations and blood banks to check available donors based on donor input credentials.

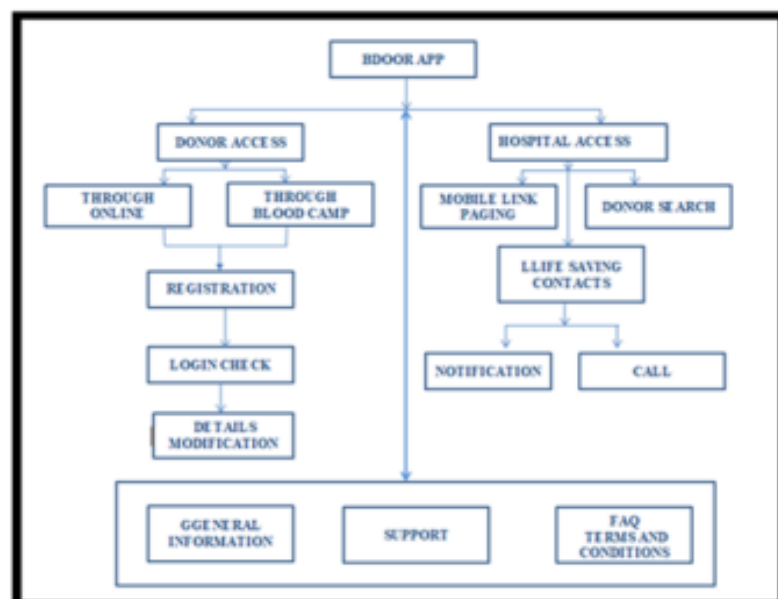Step 1: Donor has to register first if he\she wants to be a donor.

Step 2: Donor registration requires to be authorised by the hospital, Blood bank or NGOs.

Step 3: Once registered, then the donor can maintain his\her account according to his convenience.

Step 4: Every authorised institution can get an ID from the app administrator.

Step 5: These authorised institutions can search for a donor through their login ID.

Step 6: They can call, notify, and message the donor as per the donor wish.

A plasma is a liquid portion of the blood, over 55% of human blood is plasma. Plasma is used to treat various infectious diseases and it is one of the oldest methods known as plasma therapy. Plasma therapy is a process where blood is donated by recovered patients in order to establish antibodies that fights the infection. In this project plasma donor application is being developed.

A user will register by providing all his details such as user name, email id, phone number, location, password, infected status, and blood group. once the user has successfully registered to the web application they can view the availability of blood group and the count. once a user register to the web application an API request will be called which invokes one of the functions with which the user's details can be stored in database. When API invokes the lambda function where the program will be written to store the details of the lambda to store the details of the registered users in database.

When a user request for a particular blood group an API will invoke the lambda function and the lambda function will trigger operation and fetches the information of a particular blood group donor from the database and it will then fetch it back to the API and this API will display the information in the user interface. when a user requests for a particular blood group a request sms will be sent to the particular blood group donor.

Flow of mechanism as flow chart:
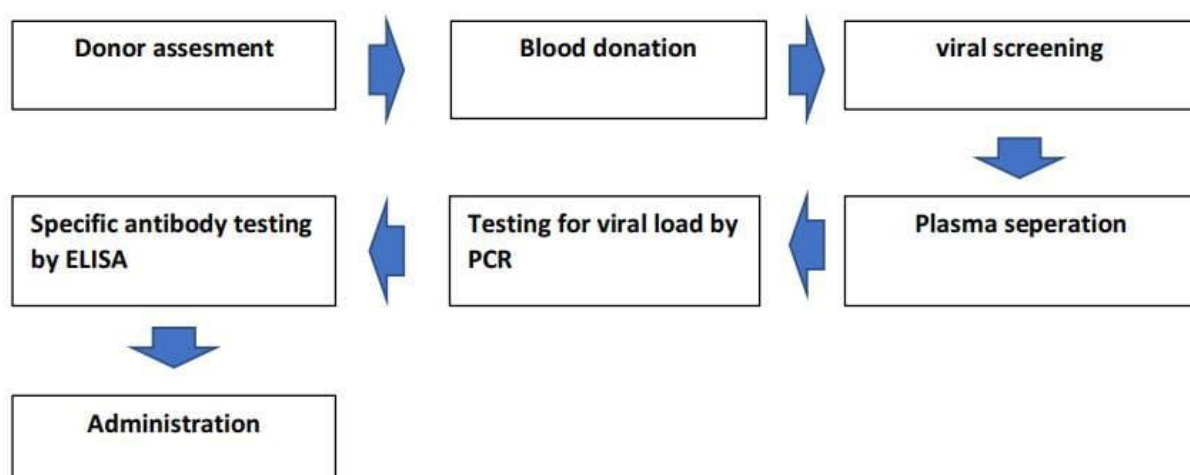
Paper Title   **:**   Plasma Donor Application.

Author   **:**   Nyan Das, MD. Asif Iqbal.

Publication   **:**   ICCIT, April 2021, Volume:48, Issue:2.

Methodology   **:**   A Machine Learning Approach , Two Clustering Algorithms.

     1) K-means.
     2) Agglomerative Clustering.

The proposed system has **two clustering algorithms** used to find Donor Information named **K-means** and **Agglomerative Clustering.**

K-means clustering time: For making the initial cluster through K-means cluster required less time as it's complexity is O(NKt). 'K' being the number of clusters, 't' number of iterations and 'N' the number of tuples.

Agglomerative Clustering Time: Every request by the recipient needs to perform agglomerative clustering. By doing labeled agglomerative clustering, we can prioritize the closer donor for donating plasma and blood.

Requesting the donor: A request to every closest donor for donating blood is made by the server to finalize the final donor. This process needs an arbitrary amount of time.

	Number of Cluster					
	4	5	6	7	8	9
Time	0.0884	0.1092	0.1105	0.1239	0.1287	0.1637
	Number of Cluster					
	10	15	20	25	30	35
Time	0.1822	0.2334	0.2886	0.3466	0.3880	0.4260

K-Means Clustering Time (In Seconds)

	Agglomerative Clustering label					
	7	8	9	10	11	12
Time	0.1239	0.1353	0.1262	0.1272	0.1265	0.1274
	K-means with 10 cluster					
	Agglomerative Clustering label					
	7	8	9	10	11	12
Time	0.0977	0.0983	0.0990	0.0971	0.1001	0.1047

Agglomerative Clustering Time (In Seconds) Concerning K-means

Our sole purpose is to reduce the time as well as the sufferings of the people. A blood or plasma recipient can effectively get donors using our system in any situation. Our proposed method is to find a more efficient way of getting the closest donor.

As the number of K-means cluster increases, agglomerative clustering taking less time to find the closest blood donor. We implement our proposed method with our cleaned dataset of blood or plasma donor. On the table, we can see that the required time is gradually rising by increasing the number of clusters.
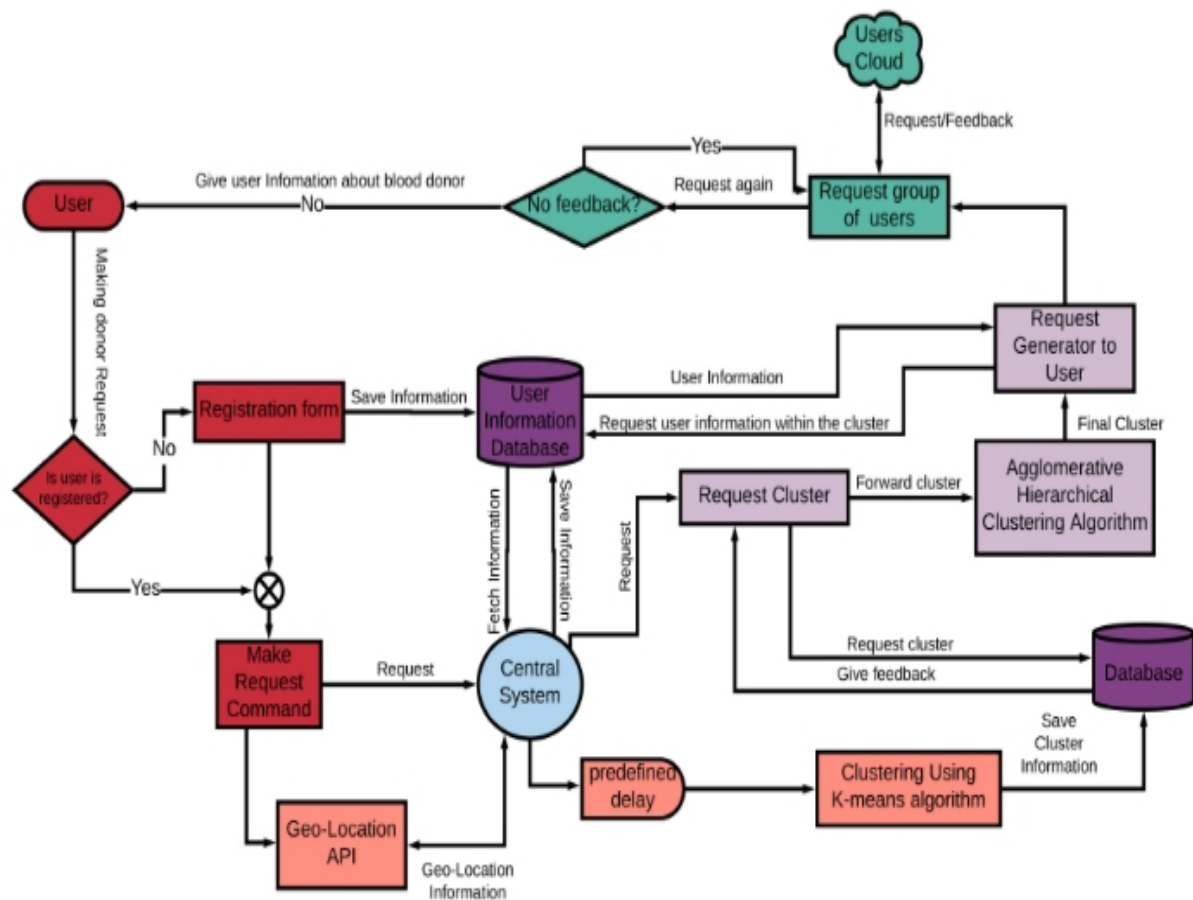
Flow Chart

Paper Title : Enhanced Mobile Application Development for Plasma, Mother's Milk and Blood Banks.

Authors : Dr. S. Brindha ; Ms. D. Priya ; Mr. S. Ajith Kannan ; Mr. D. Joyal Victor ; Mr. R. Gunachandran.

**Publication** : IRJET, April 2021, Volume:08, Issue:04

Methodology : Firebase, 000webhost.blogs.

Blood bank App provides list of blood banks in their space. Solely a registered person, with disposition to gift blood are going to be able to access the service. In this application, they are using the GPS technology to trace the way to the blood bank. This application timely updates info, the knowledge, the data concerning the donors wherever the administrator accesses the full information regarding blood bank management system. The planned system consists of the subsequent modules:

- Admin Module

- PMB Bank Module

- Donor Module

- Recipient Module

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.
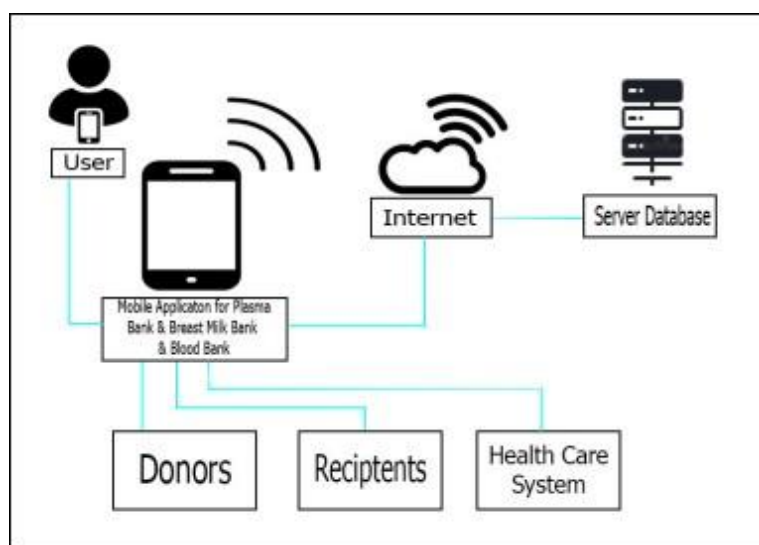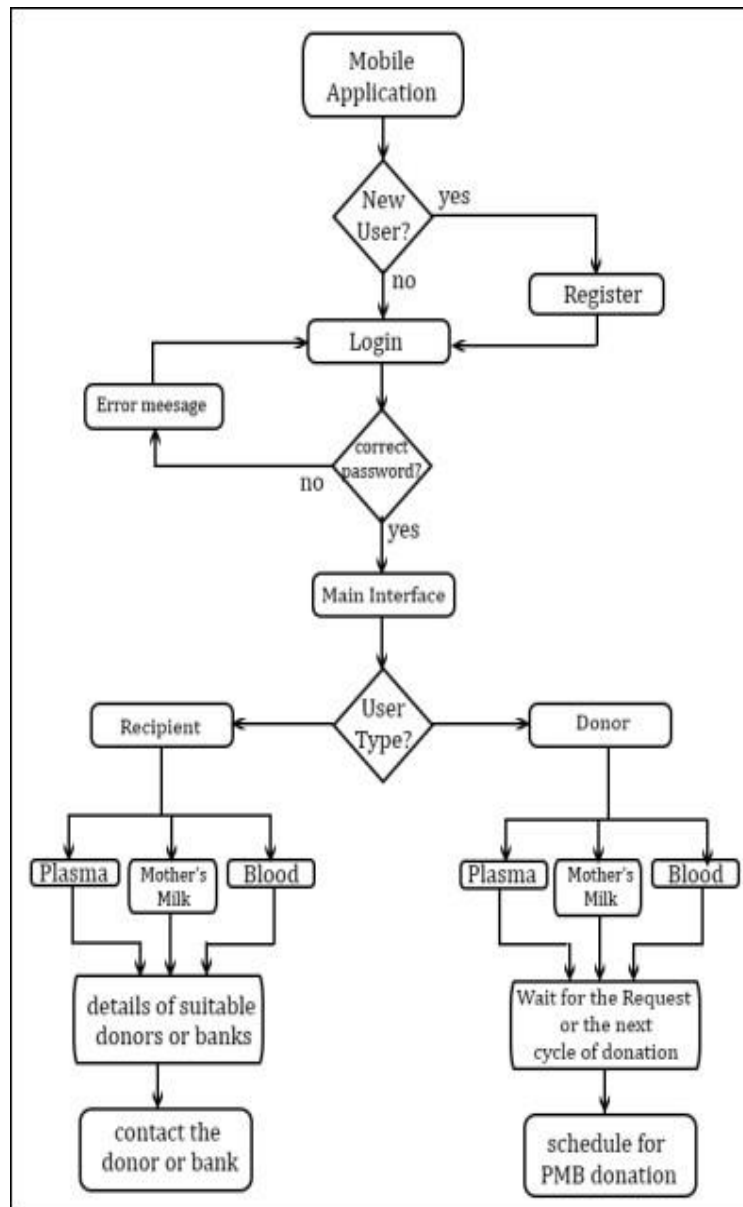
Data Flow Diagram (Donor & Recipient)