

An GPS Based Online Blood Bank Management using Database Management System



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Abstract: Blood is one of the main components of our body helping in some of the major functions and its presence in right quantity is very important for proper functioning. Therefore, blood need is going increasingly and in great demand because of so increase in the numbers of accidents, surgery or diseases where blood production is very less resulting in loss of blood from the victim's body. So, it is becoming a great need to propose a system which is very much efficient and time friendly and currently proposed system of online blood donation system is not much efficient and non-real time service. We have introduced our system where hospitals can directly contact the persons who have registered themselves having blood type same as required within their local area or person can donate blood himself to the nearest blood banks and his blood type updated in along with the total quantity of blood of different types available in the different blood banks. The time requirement of the blood by the needed has been improved effectively in our system.

Keywords : Blood , Blood Donation System , Hospitals , Blood Banks

INTRODUCTION

Presently a-days, supply chains are extremely confused than at any other time. Customers' anticipate new items, while associations, should be increasingly imaginative anyway in light of these various escape clauses and different diversions it still unequipped for acceptably tending to numerous handy, real world challenges. One of the most significant tests for example to give a brisk administration in the crisis circumstances, however a considerable lot of the administrations neglects to accomplish it. By building up a app that can support community along with different poor individuals is which can help in utilization of Online Blood Bank that can give an snappy support of destitute individuals . Our app has the client's area that can be followed utilizing GPS framework. On the off chance when blood is needed, the benefactor with the needed explicit blood gathering is distinguished along with advised of prerequisite. Here task comprises of calculation that identifies area of benefactors, recognizes contributors which are close by to the area of needed person and tells them as well.

On the off chance that the recognized close by contributors cannot give blood at present then the extent for following the givers is extended.

A Communication System Between Different Blood Banks Across Country will be established to avoid wastage of blood. Red platelets are a valuable asset, and regularly hard to come by. Keeping up ideal stock levels in emergency clinic blood donation centers is a test, as staff attempt to adjust market interest while limiting wastage. Clients of blood items should in this way guarantee solicitations of blood for transfusion are proper and wastage is kept to a base. This can be done by creating a system where blood banks can communicate between themselves depending upon their blood requirements which will avoid wastage of blood.

A database for rare blood group i.e. Bombay blood group will be made to reduce the deaths occurring due to unavailability of this blood in emergency situations. Most of us don't know about such blood group's existence on this planet. Bombay blood group got its name from the Bombay city as its presence was found there. This rare group is misinterpreted as O Blood Group because of absence of innovation technologies. It could be Rh positive or Rh negative. 1 in each 17600 individuals in India or 1 in each 25000 individuals on the planet has this blood group. We Indian are fortunate as the recurrence is increasingly here with respect to the world. It is accepted that this blood group resulted from quality transformation in Indian populace and slowly was spread everywhere throughout the world. Mumbai has got rare blood donors with this blood group approximately between 35 to 40. In India we have approximately 179 persons belonging to this category. We are trying to bring them all together to help each other where all of them will register themselves in. On emergency situations, they will get an SMS and automated call describing them about the crisis. This way we will build an efficient communication system between the donors of this rare blood group.

I. LITERATURE SURVEY

A. Current System

In the ongoing methods proposed for the donation of the blood online, donors register themselves either directly through camps or go to blood banks by searching for it online manually or through the surveys carried out by blood bank employees. User can locate for the blood banks camps which are going on and based on the nearest location to him donors based on their interest donate their blood. All the data of the donors along with blood types and the blood bank are stored in the online database where they manually enter all the information and store it online or in the physical servers.

Revised Manuscript Received on November 30, 2019.

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Website shows the available quantity with the particular blood type along with the updated time. Now whenever the seeker who wants blood, he does it either through app-based service or going to website and check whether blood is present there or not of the particular type.

If the variety of the blood required is present, he directly contacts the blood banks and in case if not present then requests are sent to the donors through Google cloud messaging or blood banks calling directly to registered donors or through app notification requesting them for donating blood urgently and seeker can get it from there as soon donor donates it.

B. Downsides of Current Framework

Despite of the blood donors who are potential enough to donate the blood, there are very less percentage of persons in our Indian population who donate the blood. But the request for the requirement for the blood has took an huge increasing growth. And due to the lack of proper architecture flow of the methodologies proposed has kept the potential donors away from donating their blood in an efficient flow manner.

Few Downsides of the Present Methodologies-

- o Since all details stored in database, therefore its hectic to track various fields stated above.
- o Blood banks themselves don't keep track of their stocks.
- o Systems are in-efficient to handle multiple requests at same time which leads to error in result
- o When blood banks are out of their stock, they are not able to help in emergency needs.
- o There is no System to Register Donors of Bombay blood Group
- o There is no System to Avoid Wastage of blood

C. Proposed system

All correspondence happens by means of SMS (Short Messaging Administration) and an automated call system which is perfect with practically all versatile kinds. "GPS Based Blood Bank System Using Dms " our this system proposed helps to bring the blood requirement benefits to the seekers with increased percentage of success. This task is begun on a web application, this will discover the benefactors. This task is begun on a web application, this will discover the benefactors. Blood contributor will partake in benefactor rundown utilizing. If there is any need of the particular blood type, seeker will see the list of the donors which are located nearby with that required blood type. A Data base for uncommon blood gathering known as Bombay blood gathering will be set up.

Inter-communication between blood banks will be established so as to avoid wastage of valuable blood.

1. Management of rare blood group: -

o Rare blood group which has H Antigen Deficiency is called as Bombay Blood Group .

o Management of this blood group will save many lives during emergencies with the help of our efficient system.

o The people with this blood group can receive only the deficient blood group of Mumbai . Hence , maintaining a detailed base is very vital of our society.

o So, Our System provides users of this rare blood group to register themselves in and hence helping us to build a database which will decrease the number of deaths occurring

due to unavailability of this blood at emergency situations

2. Preventing wastage of blood: -

o The Administration has kept a limit to refrigerate the blood cells to 42 days.

o Creating a Communication System for Different Blood banks Across the country for transmission of blood between them depending upon their blood needs

o We need metropolitan blood banks which can collect and process large units of blood and then hand them over to smaller storage centers.

o So, we will make Blood Banks to register themselves in and post the details of excess blood in our platform and Required blood bank will make request to transfer the blood at earliest to avoid blood wastage

II. SYSTEM ARCHITECTURE

a) REGISTRATION

1) Donor:

Donor does registration from the app or can directly register to any blood bank.

Donor Details will be added to the cloud database.

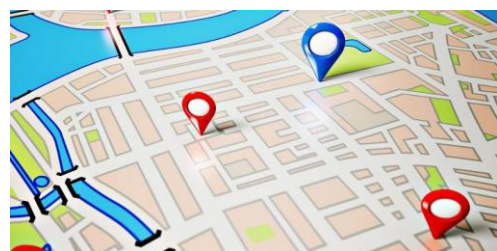
2) Blood Bank

Blood bank register themselves through our web or app-based service.

Once registered they list their details online to cloud database.

b) PROCESSING SYSTEM

- Seeker enter detail of blood group required
- Nearest Blood banks Checked for blood group availability
- If blood not available requests sent to donors
- Nearest nearby donors list available
- Donors with specified blood group selected
- Donors receive IVR call and message from GCM
- Request accepted Donor gets notified to nearest blood banks through location link sent to him through GCM
- Seeker get notified through GCM
- Both reach blood bank and seeker get the blood

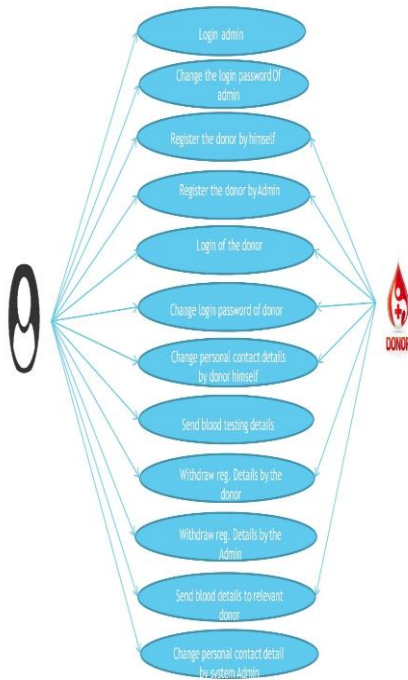


Diag: Nearest blood banks available

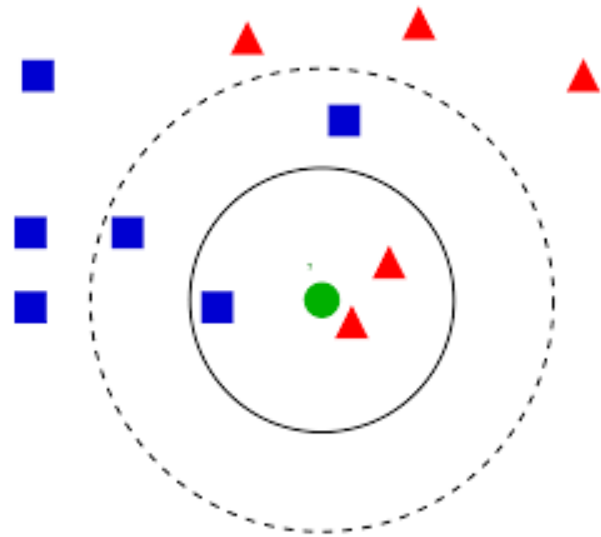


Diag: Storage Of Blood

1

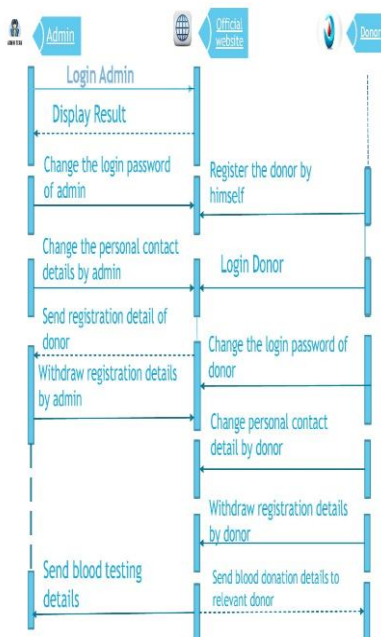


(instead of different calculations, for example, GMM, which accept a Gaussian dissemination of the given information).



Diag: K Nearest Neighbor diagram

2



III. ALGORITHMS INVOLVED

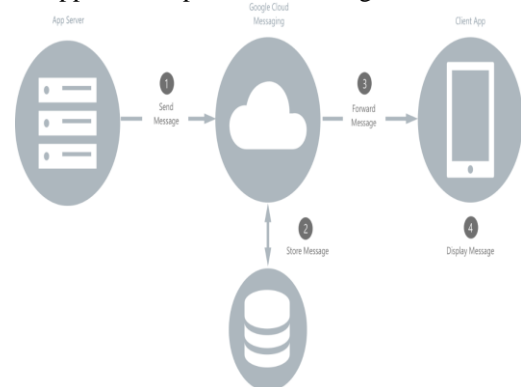
A. K- nearest algorithm

K-Nearest Neighbours is one of the most fundamental yet basic arrangement calculations in Machine Learning. It has a place with the managed learning area and finds serious application in example acknowledgment, information mining and interruption recognition.

It is broadly dispensable, all things considered, situations since it is non-parametric, which means, it doesn't make any fundamental suspicions about the conveyance of information

B. Google Cloud Messaging

Google Cloud Messaging (GCM) is an assistance that encourages informing between versatile applications and server application. Administration that handles the sending, steering, and queueing of messages between server applications and portable customer applications. A customer application is a GCM-empowered application that keeps running on a gadget. The application server (given by you or your organization) is the GCM-empowered server that your customer application speaks with through GCM.



Diag: Google Cloud Messaging Workflow

C. Interactive Voice Response

Interactive voice response is a special feature where robots get interact with the human beings.

In the service, robot speaks predefined text written in the background or perform actions based on the flow of execution of the actions. It automatically calls to the targeted user without need to do in manual work to perform its execution every time.



Diag : Interactive Voice Response

IV. ADVANTAGES OVER OTHER SYSTEM

1. At the point during emergency blood requirements, the old system of accessing the database of donors is not efficient. Also, the data are not updated with time. Here in this we receive this model, the guest is quickly associated with the benefactor.
2. In our algorithm the details of location of a blood seeker party is taken care of. Our Algorithm makes sure that the nearest location nearby donors are contacted so that there should be as fast as fulfillment of necessity of blood requirement for the seeker side.
3. They don't have Bombay blood group as an option. They accept only commonly used or present blood groups.
4. All the blood group quantities are updated automatically through our Google Cloud Platform Service due to which the available blood group are shown live at the nearest blood bank.
5. Whenever there is no blood available for any blood group type automatically requests are sent to the nearest donors of respective blood group to maintain availability.

V. CONCLUSION

This undertaking expects to make a web application known as GPS based online blood Bank Management system using DMS. The sole motivation behind this undertaking is to build up a PC framework which can connect givers. Here framework helps in managing blood transfers administration along with making a detailed base to store information of loads of blood in every zone as information on benefactors in every metropolis. Moreover, individuals can have the option of seeing the needy patients who require blood. They will have the option to enlist as benefactors and in this manner get a SMS and a mechanized call from their neighborhood customers who require blood to give blood in instances of emergencies. The site will help create open mindfulness among its guests of the emergency clinics requirement for blood so as to supply the proper givers. It will lessen number of deaths happening because of inaccessibility of uncommon blood group known as Bombay blood group as a result of a productive framework set up. A correspondence framework between various blood donation centers will lessen wastage of blood. Future work will be centered around further upgrading these models to permit combination with blood benefactor the

executives frameworks including creative methods for perception.

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