Blood Bank, Donor Tracking and Management System Using Geofencing

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Abstract: Blood is an emergency need for some situations. The problem is to find right donor at the right time is very difficult task in emergency situation. We want to build an application of donor who can help each other during an emergency. This application timely updates the information respect the donors where the decision maker accesses the entire information about blood bank system. Donor will be prompted to enter an individual's details, like name, phone number, and blood group. In the urgent need of a blood requirement, you can quickly check for blood banks or hospitals matching a particular or related blood group and reach out to them through the App using geofencing and filtering technique. Blood bank details displayed on the user screen to select proper requirement to user. If blood is unavailable at blood bank then user search for donors nearby area. A large number of blood donors are draw in using an Android application. Since almost everyone conveyance a mobile phone with him, it ensures present location tracking and communication. Only a registered person, with disposition to donate blood, will be able to access the service. In this application we are using the GPS technology that will be used to trace the way to the blood bank. The user will get the route to reach the desired location and he won't have to ask manually, therefore time can be saved.

Keywords: Data mining, Cloud, HTTP server, MySQL database, GPS, Geofencing

I. INTRODUCTION

In today's rapid processing scientific world technology has become a very important aspect of life. Today's generation is more depended on advanced technology than any other aspect. Today, most of the people use advance technologies in their daily life like Internet, Smartphone. So, the idea mentioned in this paper will make the process of blood bank less time consuming by gathering all information of donor and receiver. In these application there will modules for donor, Receiver, and blood bank. Donor and receiver has to register himself to use this improved system. For Receiver, no need to call in every blood bank to check the blood availability. In improved system only admin can check. Blood bank will send notification to donor regarding Donation camps or Emergency donation. The development of a Blood Donation System depends on android-based application. System has admin which acts as server to match donors and patient pair compatibly by using rule-based knowledge. All Clinic System should have patient or receiver and donor information control matcher system. Donor add their details in system so user identify the proper donor. Blood details and hospital details also add by system so their data and blood availability also available for users. Login and registration is also provided for users, donors, and blood bank systems. After adding all data by donors and blood banks the data is available for users to further uses. Google map is integrate in android application so user find the donors using geofencing technique. User input data as blood group and distance to find nearby donor. And all the donor data such as blood group, haemoglobin, age, health status is available for users. User can directly contact with donor through android application.

II. LITERATURE SURVEY

1.   T. Hilda Jenipha and R. Backiyalakshmi [1], made a cloud based blood donation app and we get to know about this from their paper "Android Blood Donor Life Saving Application in Cloud Computing". Where the contact details will appear in alphabetical order on the screen. In case of urgent blood requirement, one can quickly check for contacts matching a particular or related blood group and reach out to them via Phone Call/SMS through the Blood donor App. Their Blood Donor App provides list of donors in your city/area. According to them, Cloud- based services can prove important in emergency blood delivery since they can enable central and immediate access to donors' data and location from anywhere. Since almost everyone carries a mobile phone with them, it ensures instant location tracking. The location-based app, operational on android platform, will help users easily find donors of matching blood groups in their location and can be accessed via their mobile numbers.

2.   From Shek and Shilpa [2] – the authors of "Android Blood Donor Life Saving Application in Cloud Computing" we can understand, the importance of having blood donation app. According to them, despite numerous significant achievements, the discipline of Supply Chain Management (SCM) is still incapable of satisfactorily addressing many practical, real-world challenges. The user's location will be detected using GPS. If there is need of blood, the donor with

the required blood group is identified and notified of the requirement. The project includes algorithm which detects accurate location of the donors, identifies the donors who are available nearby to the location of requester and notifies them. If the identified donors are not available or not willing to donate blood at present then the scope of detection is increased. This is done by increasing the scope of search. Notifying the donor about the need of the blood is the most important task of the system.

3.   Snigdha, Pratiksha, Siddhi, Pranita and Varsha [3] thinks the problem is not insufficient number of donors, but finding a willing donor at the right time. They want to build a network of people who can help each other during an emergency. Their application timely updates the information regarding the donors where the administrator accesses the whole information about blood bank management system. Donor will be prompted to enter an individual's details, like name, phone number, and blood group. In the urgent time of a blood requirement, someone can quickly check for blood banks or hospitals matching a particular or related blood group and reach out to them through the App. Blood bank App provides list of blood banks in an area. They feel that, a large number of blood donors are attracted using an Android application. Since almost everyone carries a mobile phone with them, it ensures instant location tracking and communication. Only a registered person, with willingness to donate blood, will be able to access the service. In this application they are using the GPS technology that was been to trace the way to the blood bank. The user will get the route to reach the desired location and he won't have to ask manually, therefore time can be saved.

4.   In LBS system, use of Google map in Android, this provides a number of objects to handle maps in LBS system like Map View which displays the map. To handle this, a Map Activity class is there. To annotate map it provides the overlays class. Even it provides canvas by which one can easily create and display multiple layers over the map. Moreover, sufficient provisions are there to zoom the map, localize the map by means of Map Controller. By using GPS in android phone it is possible to develop any application that needs tracking like hospitals, schools.

III.   PROPOSE SYSTEM

The proposed system provides easier way for the ones who are in need of blood. The user which may be donor or the receiver can register with the system. The user can use the login to request the availability check of the blood in nearby vicinities. He can also check the updates regarding the Blood donation camp that is to be held. The receiver or requester is notified about the nearest blood donor or blood bank to the location of the registered user. The data regarding user and Blood bank is maintained using database List Item. When user selects need of blood option then the user's current location will be traced first using Google Location API and by using the current location, the blood bank and donor will be plotted on the map. And also the user has to provide which blood group here quires so that only those blood banks and donors are plotted on the map. The location of blood bank will be retrieved from Google API and the location of donor will be his current location and it will be retrieved using Google API. Now, we have also provided a facility for the users that they can select their location viz from registered location, current location and provided location. To select the provided location he has to plot this location on map with help of plotter instead of typing the entire address. The distance between the user and each blood bank or each donor will be calculated by Geofencing.

IV.   SYSTEM ARCHITECTURE

Architecture diagram explains the system overview, as to how system works in real. There are four main components which are central database, users(Android phone & desktop applications for blood bank), server, Google Map Services.
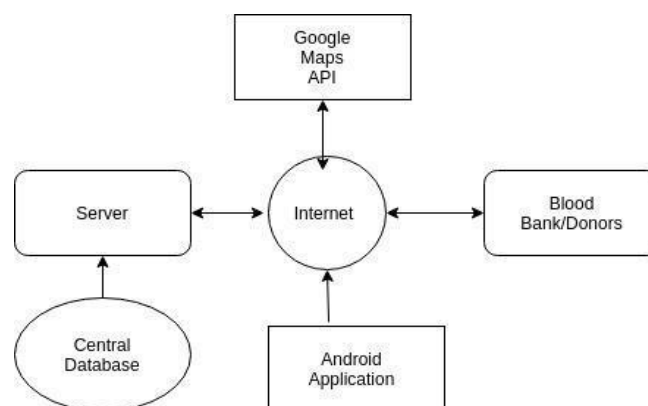

Figure 1: system architecture

The server will consist of database where data such as stock of blood bank, donor's details, locations are stored at this central database. Android application will be for the users like us who can register themselves and once registered, they become the donor for our application. The Desktop application will be for the blood banks where blood banks will be added by admin and the user_id and password will be given to the blood bank by the admin. Then the blood bank can add or update stock and also respond to users request. Users are able to find location of blood bank and donors when they require blood or if they want to donate blood using internet through Google Map API. Users having android phone should have internet and through which tracking is done using Google Map API. Server stores this information and which is given to central database.

V. CONCLUSION

The goal was to achieve the system which will reduce the time required for collection of donor information. Our proposed system provides easier way for the one who are in need of blood. Proposed system focused on provide the blood as immediately as possible by checking the nearest blood bank and nearest donor. Also the donor donate the blood when such donor need the blood the discount is given to such donor. Thus the proposed system provides appropriate information in less time as compared to traditional method of searching blood banks and donors which included practices like man to man communication, hoardings, and paper pamphlets and hence, clubs with today's high demanding blood requirement.

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