LITERATURE SURVEY

INTRODUCTION

In the literature survey a brief summary of the different methods have been proposed for plasma donor application over the period of 2010 to 2021. Each of these 10 papers has a unique approach towards the cloud application for plasma donation in some parameter or the other. The summaries of each of the papers are provided in the chapter

1. REAL-TIME CLOUD SYSTEM FOR MANAGING BLOOD UNITS AND CONVALESCENT PLASMA FOR COVID-19 PATIENTS

In health care systems, blood management services are essential to saving lives. In such systems, when a unit of blood is required, if the system is not able to provide it on time, sometimes this may lead to patient death, especially in critical cases. Unfortunately, even if the required blood unit is available within the system, contradictions may occur and the required blood unit may not be allocated to critical cases on time, due to the allocation of these units to lower priority cases or due to the isolated operate of blood banks within these systems. So, to overcome these obstacles, we proposed a real-time system on a cloud, to managing blood units within the whole health care system. This system will allocate blood units depends on the deadline and the severity of the case that needs blood, in addition to the types, quantities, and position of available blood units. Where, this system eliminated the need for human intervention in managing blood units, in addition to offering the ability to easily develop the system to deal with new urgent requirements, which need new methods of managing blood units; as is happening today with the COVID-19 epidemic. This system increases the performance, transparency, reliability, and accuracy of blood unit management operations while reducing the required cost and effort.

2. LIFESAVER E-BLOOD DONATION APP USING CLOUD

E-health provides a new method for using health resources. In proposed system the aim is to provide a direct call routing technique using Asterisk hardware. A blood bank database is created by collection of details from various sources like Blood banks, NSS, NGO's, hospitals and through web interface. The data collected will be maintained in a central server. This central server will be associated with a Toll-free number that can be used to connect to it. An algorithm will be defined based on the various parameters that need to be accounted for, before blood transfer is done. The willingness of donor and the closeness of the donor to the place from where the call is coming are also accounted for in defining this algorithm. Based on the algorithm the most eligible donor is found out. From the server the call from the required person is routed to the eligible donor's number. All information about the donors and blood bank is stored on the cloud. As per blood requirement, user can quickly get notification from blood bank within the radius of 5-10km. If requested blood group is available in the blood bank then it will send positive reply message to the users. If requested stock is not available in the blood bank then blood bank send notification to all donors. If anyone is able to donate then he will reply to blood bank. This is how the proposed system will work.

3. DEVELOPING A PLASMA DONOR APPLICATION USING FUNCTION-AS-A-SERVICE IN AWS

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 by using

AWS services. The services used are AWS Lambda, API gateway, DynamoDB, AWS Elastic Compute Cloud with the help of these AWS services, it eliminates the need of configuring the servers and reduces the infrastructural costs associated with it and helps to achieve serverless computing. For instance, during COVID 19 crisis the requirement for plasma increased drastically as there were no vaccination found in order to treat the infected patients, with plasma therapy the recovery rates where high but the donor count was very low and in such situations it was very important to get the information about the plasma donors. Saving the donor information and notifying about the current donors would be a helping hand as it can save time and help the users to track down the necessary information about the donors.

4. A FRAMEWORK FOR A SMART SOCIAL BLOOD DONATION SYSTEM BASED ON MOBILE CLOUD COMPUTING

Blood Donation and Blood Transfusion Services (BTS) are crucial for saving people lives. Recently, worldwide efforts have been undertaken to utilize social media and smartphone applications to make the blood donation process more convenient, offer additional services, and create communities around blood donation centers. Blood banks suffer frequent shortage of blood; hence, advertisements are frequently seen on social networks urging healthy individuals to donate blood for patients who urgently require blood transfusion. The blood donation process usually consumes a lot of time and effort from both donors and medical staff since there is no concrete information system that allows donors and blood donation centers communicate efficiently and coordinate with each other to minimize time and effort required for blood donation process. Moreover, most blood banks work in isolation and are not integrated with other blood donation centers and health organizations which affect the blood donation and blood transfusion services quality. This work aims at developing a Blood Donation System (BDS) based on the cutting-edge information technologies of cloud computing and mobile computing.

5. A SMART APPLICATION ON CLOUD BASED BLOOD BANK

Blood donation is considered as the noble help toward mankind yet the major challenge is to find the exact blood group at the required time. This application mainly aims to solve this problem by tracking these donors with the help of cloud. The system is designed such that any person willing and eligible to donate blood or even any other organ has to register via this application. All this donor information is kept safely in the cloud. The admin can validate or update this information accordingly in the cloud and even sends an alert to the donors in case the matched donor is found. The use of cloud makes this system much better than other e-blood bank, not only it store data in a cost effective way but it also seamless access to this electronic records of donors and patient makes the system more transparent. All these advantages of cloud make this project all the more important than any other e-blood bank system

6. IMPLEMENTATION OF BLOOD DONATION APPLICATION USING ANDROID SMARTPHONE

Blood is an important constituent of human body. Timely availability of quality blood is a crucial requirement for sustaining the healthcare services. In the hospital, in most of the cases, when blood is required, could not be provided on time causing unpleasant things. Though donor is available in the hospital, patient is unaware of it, and so is donor. To resolve this, a communication between hospital, blood bank, donor, and receptor is important. The system listed with following forecasting on price variations and stock handling, increase in number of blood type, increase in human accident Infrastructure, blood on various category to be managed. So we solve the problem using the android application. The system will make sure that in case of need, the blood will be made available to the patient. There will be android app to make this communication faster. It aims to create an information about the donor and organization that are related

to donating the blood. The methodology used to build this system uses GPS. The Proposed system will be used in Blood banks, Hospitals, for Donors and Requester whoever registers to the system.

7. DESIGN AND DEVELOPMENT OF MOBILE BLOOD DONOR TRACKER

The number of smartphone users globally will exceed 2 billion in 2016, according to new statistics from eMarketer—after almost getting there in 2015. Next year, there will be more than 1.91 billion smartphone users nationwide, a figure that will boost an extra 12.6% to close to 2.16 billion in 2016. In this paper we are proposing an application for tracking Blood Donors called Mobile Blood Donor Tracker. Mobile Blood Donor Tracker is a mobile application that connect users with the Blood Centre to facilitate the blood collection from donors during emergencies, facilitate the communication of blood donors with each others, facilitate the communication of blood donors with the Hospital blood centre.

8. ANDROID BLOOD DONOR LIFE SAVING APPLICATION IN CLOUD COMPUTING

 Emergency situations, such as accidents, create an immediate, critical need for specific blood type. In addition to emergency requirements, advances in medicine have increased the need for blood in many on-going treatments and elective surgeries. Despite increasing requirements for blood, only about 5% of the Indian population donates blood. In this paper we propose a new and efficient way to overcome such scenarios with our project. We have to create a new idea, just touch the button. Donor will be prompted to enter an individual's details, like name, phone number, and blood type. After that your contact details will appear in alphabetical order on the screen; the urgent time of a blood requirement, you 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. Blood Donor App provides list of donors in your city/area. Use this app in case of emergency. A large number of blood donors are attracted using an Android application. 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 him, it ensures instant location tracking and communication. The location-based app, operational on android platform, will help users easily find donors of matching blood groups in their location and access their mobile numbers for instant help. Only a registered person, with willingness to donate blood, will be able to access the service

9. DESIGN AND IMPLEMENTATION OF MOBILE APPLICATION FOR BLOOD DONATION AND TRACKING DONORS

This thesis describes "Blood kin", a mobile application built on the Android platform that provides Social Location-based services for finding blood donors and blood bank centers. Blood is the fuel of life and despite in all advances in Technology and medicine an alternative medical way to substitute Blood, blood components or blood-derived products have not been found yet. Blood can only be supplied by living donors. Medical crises emerge whenever or anyplace. During medical crises, a blood transfusion might be required to treat patients. The hospitals and clinics, particularly in our locales, discover that it is hard to get blood promptly, particularly of negative blood and rare types. The issue is increasingly serious when life is lost because of the inaccessibility of blood supply. To resolve this, few systems have been proposed by different Authors; wherein the blood donor contact information is kept up by a few organizations or blood donation centers. However, these solutions were not sufficient, as it provides a list of donors based on the static contact location of the donors, as provided during registration. Whereas in a real synopsis, the real area of the donor could be far from the patient's location. This thesis proposes a system for dynamically locating the nearest donors for blood provisions. The system tracks the area of donors (volunteers)through the Global Position System(GPS) and provides the

requestor or health centers to seek closest donors based on their exact location at the critical moment. This proposed system gives a solid technique for finding Blood patrons, particularly around the regions as to find where few blood banks or donors are available.Blood Gift and Blood Transfusion Services (BTS) are crucial for protecting people's lives. Lately, global efforts have been initiated to utilize social media and smartphone applications to make the blood donation process more comfortable, offer additional services, and create communities around blood donation centers.Blood banks suffer a persistent shortage of blood; hence, advertisements are frequently seen on social networks and other media outlets urging healthy individuals to donate blood for patients who urgently require a blood transfusion. This application helps people receive notifications on urgent blood donation calls, know their eligibility to give blood, search for the nearest blood center and donors, and present a certificate of participation. It also helps establish a blood donation community

10. AN EU PROGRAMME OF cOVID-19 CONVALESCENT PLASMA COLLECTION AND TRANSFUSION

This document proposes to continue drawing on the resources of the EU competent authorities for blood and blood components, the ECDC, EU blood establishments and the European Commission to face the challenge of responding to the COVID-19 crisis by supporting the development of antibody based treatment options. It aims to launch a coordinated and effective approach to the collection of convalescent plasma across the EU, supporting the possibilities for the treatment of acutely ill patients (or patients at risk of becoming acutely ill) with the plasma within observational studies, in randomized and case-controlled clinical trials and for emergency use, and in the longer term, for the development of immune globulin concentrates by industry. EU-wide collaboration on establishing common protocols for donor recruitment, donation and gathering outcome data on a large scale will support the demonstration of safety and quality of convalescent plasma for transfusion. Current provisions and standards for the collection, testing, processing, storage and distribution of blood and blood

components should be applied in these circumstances, including the application of the principle of voluntary unpaid donation, in addition to the technical guidance defined in this document and any more stringent requirements defined at the Member State level.