INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

Impact Factor: 8.379

Working of a Blood Donation Application Using GPS

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ABSTRACT -"Blood" is one of the most important commodities we need in our lives. The number of blood donors is very low compared to other countries. In our project, we propose a new and efficient way to overcome this situation. The donor is asked to enter his personal information such as name, phone number, age, weight, date of birth, blood type, address, etc. In emergencies when blood is needed, we can search for nearby blood donors using GPS. Blood donation Android applications with GPS capabilities have become increasingly popular in recent years, as they provide a convenient and efficient way for individuals to locate nearby blood banks or blood donation centers. Here is a report on the main features and benefits.

KEYWORDS: Blood Donation Android Application, Donors, Blood Bank, Blood,

I. INTRODUCTION

A blood donation Android app is an innovative solution to the challenge of finding and connecting blood donors with recipients. The app would serve as a centralized platform where donors can register themselves and their blood type, and recipients can search for donors in their local area.

With this app, donors can receive notifications when their blood type is needed, and recipients can make urgent requests for blood donations. The app would also provide important information on blood donation, including eligibility criteria, necessary precautions, and the benefits of donating blood.

The app would help to streamline the process of blood donation by eliminating the need for donors to physically visit blood banks or hospitals, which can be time-consuming and inconvenient. It would also create a safe and secure platform for communication between donors and recipients, ensuring that the process of blood donation is efficient and effective.

II. LITERATURE REVIEW

Blood transfusion is an important component of health care. It helps save a large number of lives each year, both in normal and emergency situations. It also significantly improves the life expectancy and quality of life of patients with various acute and chronic diseases. Blood transfusions help voluntary blood donation. In the next five to ten years, the supply of blood is important to manage the burden of the elderly population. In addition, in the event of surgery or treatment, medical facility staff asks the affected person's family to donate blood, or the family must be forced to find a

donor who has the same blood type as the affected person. This emergency scenario leads to numerous difficult situations in the search for donors. New techniques must meet the demands of society.

A Geo-localized Blood Donor Management System [1] As an alternative technology, it employs Mobile Crowdsourcing. This is the practice of requesting or distributing a task to a wide number of individuals. Crowdsourcing systems enlist a vast number of individuals to help solve a diverse range of problems. It gathers millions of users to create an item that would benefit the whole of society. Crowdsourcing can be linked to a wide range of topics, and it poses several intriguing technological and social problems.

M-Health [2] is a new wellness horizon providing healthcare facilities through mobile devices and networking technology. Blood donation in health care is a complicated procedure that takes months to select a donor that has the same blood pool as the recipient. Android-based blood donation application is an M-Health solution to connect the requester and donor at any time and from any place.

The Android Smartphone Blood donation application [3] is an android-based total blood donation utility that keeps the information of blood donor volunteers. In instances of an emergency, the request can transmit the message to all eligible donors for donation, together with records from the blood institution and clinic. They used the cloud hosting infrastructure to keep application data anywhere and at all times. It is also a voluntary blood donation as a requesting applicant which is the superior attribute of our submission. The requester can transmit the message to the registered users along with an emergency sign for the blood needed, and a message will be transmitted to all voluntary donors of blood. When a volunteer confirms the donation of blood, he is recognized as a donor. Our software supports the collection of blood donations and ensures careful handling of the emergency Our project is meant to offer data on the requested blood and the form of donors eligible in the organizations. The software program assists the requester to deliver the message to some degree within the maintained blood donation network and updates the recipient who's inclined to donate the asked blood at the identical time. We also created request-donor profiles to check our requests, reviewing them to help improve timely access to statistics and quick response in the event of an emergency.

III. BLOOD DONOR APPLICATION

Existing system: While blood donation applications can be incredibly useful, there are some potential disadvantages to existing apps.Here are a few examples:

1. Limited Availability: Some blood donation apps are only available in certain countries or regions, which can limit their usefulness for people who live elsewhere.
2. Limited User Base: Blood donation apps depend on a large user base of donors and recipients to be effective. If the app has a small number of users, it may be difficult to find a match.
3. Privacy Concerns: Some users may be hesitant to provide personal information such as their blood type or location due to privacy concerns. Additionally, there is a risk of data breaches or hacking, which could compromise user data.
4. Inaccurate Information: Some blood donation apps may provide inaccurate information, such as outdated eligibility criteria or incorrect contact information for blood banks.

Proposed System Methodology: Increased accessibility: An Android application can make it easier for people to find nearby blood donation centers, schedule appointments, and get notifications about blood donation campaigns and events. This can help increase the accessibility of blood donation and encourage more people to donate blood.Improved communication: An Android application can also help blood donation centers communicate more effectively with donors. They can send out alerts about the need for specific blood types, provide updates on the status of donated blood, and inform donors about upcoming events or blood drives.Time-saving: With an Android application, donors can quickly and easily schedule appointments to donate blood without having to spend time making phone calls or visiting the blood donation center in person.Increased awareness: An Android application can also help raise awareness about the importance of blood donation and provide educational resources about blood and its uses in medical treatments.Enhanced safety: By using an Android application, blood donation centers can keep track of donor records, including their medical history and previous donations. This can help ensure the safety of both donors and recipients.

IV. PRODUCT FUNCTIONALITY

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4. Increased awareness: An Android application can also help raise awareness about the importance of blood donation and provide educational resources about blood and its uses in medical treatments.
5. Enhanced safety: By using an Android application, blood donation centers can keep track of donor records, including their medical history and previous donations. This can help ensure the safety of both donors and recipients.

V. SYSTEM DESIGN

1. Android Studio

Android Studio is a powerful Integrated Development Environment (IDE) that is specifically designed for developing Android applications. Some of the main uses of Android Studio in application development are: code editing, layout design, debugging.

2. Firebase

Firebase Realtime Database can be used to store and sync donor information, blood donation centers' details, and blood inventory in real-time. This feature can help blood donation centers keep track of available blood units and notify donors about the shortage of specific blood types.

3.The decision tree algorithm tries to identify and predict the blood donors based on gender, age and height.
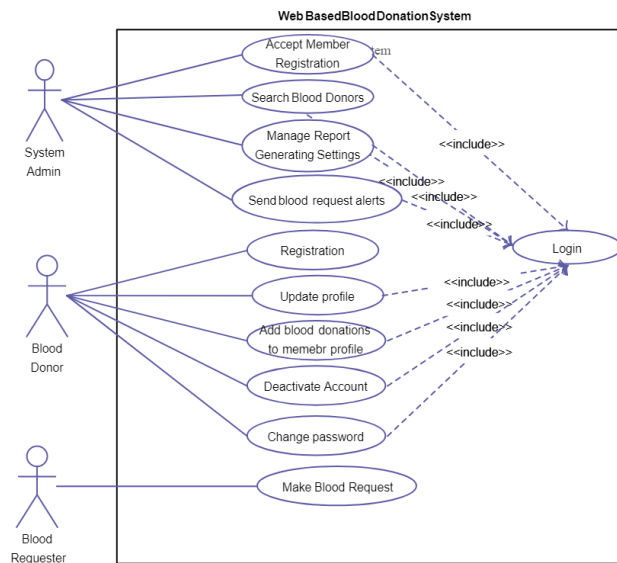

Chart -1: Flow of Blood Donation Application

V. WORKING

The working of a blood donation application generally involves the following steps:

Registration: The first step is for users to register on the blood donation application by providing their basic details, such as name, age, blood group, and contact information.

Donor search: The application can search for potential donors based on their location and blood group. It can also provide information on nearby blood donation centers and their contact details.

Blood donation request: If a blood donation center requires a specific blood type, it can request donors with that blood type to donate blood through the application.

Notifications: The application can send notifications to registered donors about blood donation campaigns, events, and shortages of specific blood types in their area.

Donor history: The application can maintain a record of donors' blood donation history, including the date of donation and the blood type donated.

Blood inventory management: Blood donation centers can use the application to manage their blood inventory, including the number of units available and their expiration dates.

VI. CONCLUSIONS

In conclusion, a blood donation application can be a powerful tool for blood donation centers and donors. It can help blood donation centers manage their blood inventory efficiently and notify potential donors about the shortage of specific blood types. At the same time, it can enable donors to track their donation history and receive notifications about blood donation campaigns and events.

The use of Firebase can further enhance the functionality of the blood donation application, providing real-time synchronization of data, secure user authentication, push notifications, cloud storage, analytics, and crash reporting.

In conclusion, a blood donation app offers various advantages, including convenience and increased efficiency. It provides a simple and convenient way for donors to search for nearby blood donation centers, schedule appointments, and track their donation history.

ACKNOWLEDGEMENT

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