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Blood Donation Application

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Abstract: The number of articles on social networking sites like Facebook and Twitter asking for blood donors shows that blood donation requests are rising steadily along with the rapid growth in social network usage around the world. Finding blood donors is a difficult problem in practically every nation. Our application was created using a variety of software technologies, including languages and frameworks. Our software offers a trustworthy platform for connecting patients and nearby blood donors.
Keywords: Mobile application, Blood donation, Health

I. INTRODUCTION

In the past, a patient in need of blood had to get in touch with a blood bank or a donor within their network of friends, family, and acquaintances who belonged to a matching blood group. Finding a qualified donor within a small group of people in a particular amount of time, however, is challenging. Additionally, blood banks' availability of suitable blood groups is not guaranteed. Additionally, there has been a consistent rise in posts on social networking sites asking for blood donations. Every minute of every day, someone needs blood, thus the demand for it is constant. Users can locate nearby donors using the Blood Donor application. The convenience of communicating with donors, notwithstanding the fact that this application aids in donor identification is slow and labor-intensive because the requester (the patient or clinic) must get in touch with each donor separately.

II. LITERATURE REVIEW

The blood bank system refers to the process of collecting, separating, and storing the blood, which will latterly be used in the blood transfusion process. Blood transfusion is veritably common; this procedure is used for people of all periods. numerous people who have surgery need blood transfusions because blood loses during their operations. For illustration, during heart surgery, one third of the cases have a transfusion. The people who have serious injuries similar to auto crashes, war, or natural disasters need blood transfusions to replace blood lost during the injury. It may come as a surprise that due to acceptable operation practices thousands of liters of blood get wasted every day across the country, thus, there is need to relinquish some of the stylish fashion for the blood bank. So, the relinquishment of Online Blood Donation Application can also come beneficially for the blood banks to ameliorate the operation system the blood banks. Numerous authors verified about the Devisee of Blood Bank operation system,thus numerous experimenters have developed for the blood bank operation some of them epitomized below.

1) G Muddu Krishna and S. Nagaraju's "Short Message Service (SMS) based blood bank" (2016). In this system, a request for blood was made via SMS. The data processing module then checked the blood's availability and responded via SMS. Contact information was given to facilitate faster blood availability and better communication. The whole system was implemented by using GSM modem, smart card CPU- Raspberry Pi 2 kit and IR sensors and Zigbee module. This system is limited to the particular geographical area. So, it's need to overcome this problem, thereby getting blood at right time will be possible.

2) In the 2012 publication "Automated Online Blood Bank Database" by Muhammad Arif, S. Sreevas, K. Nafseer, and R. Rahul. This system provides direct call routing fashion using the asterisk tackle. The Asterisk software is to convert normal computer into the communication garçon. The blood bank correspond database which will be maintained in Centre garçon, whenever any blood candidate makes a call on the risk-free number also blood candidate will get connected to blood patron call also the detail about the blood candidate will shoot to the patron on his mobile. If the call isn't connected to the 1st patron also the call has been connected to another patron. After accepting the request for blood donation, the patron's name gets removed from the patron list for the coming 8 weeks.

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3) In Dr. Sharad Maheshwari and Vikas Kulshreshtha's article "Benefits of management information system in blood bank". The recipients of the blood bank management information system are discussed. They highlight the positive aspects of these systems.

4) In Ramakant Gawande, Narendra Gupta, and Nikhil Thengadi's article "MBB: A Life Saving Application". They devise a mechanism to connect every donor and aid in managing the blood transfusion procedure. Additionally, their system would keep a database with information on blood donors and donations organised by city and then further by location.

A. According to Anish Hamlin M. R. and Albert J. Mayan's "Blood Donation and Life Saver:

App for Blood Donation". They created a tool that requires users to log in before they can get information about local blood donors through GIS. Additionally, they can donate blood by signing up themselves.

B. "Smart Blood Bank Based On IoT" by Radha R. Mahalle1, S. S.Thorat

The IoT-based blood bank system they suggested connected all blood banks through a cloud network, allowing them to communicate with one another and look for blood group requirements in nearby areas. The system's flaws were caused by its sole focus on blood bank databases. However, it would have been more beneficial if they had also thought of the donors as a component of the system. Additionally, it lists each blood bank that is close to the user. The admin had total access to the data in the app in this.

III. METHODOLOGY

Around 12000 Indians perish each year as a result of a shortage of donors and healthy, recent blood. Studies show that India requires 8.5–10 million units of blood annually, however only 7.4 million units are really available. The parameters for transfusion of blood are influenced by a number of elements whenever there is a need for blood, the most significant of which is the freshness and donor's overall health. The availability of blood is also influenced by the urgency.

This project is a creation of an application that helps us to donate or receive blood in the time of emergency. First, we created the login page and along with that register, a page was also made. The login page asks for the login details of the pre-registered user. We connected the login page and register page to redirect users to the login page after registering themselves. Then we made the Main page where the Donor can see the receiver's request and receiver can see the Donor of similar blood group. To make this project we used android studio and Google Firebase database. Android studio is an official IDE based on IntelliJIDEA used for creating Android apps for all devices with pre-built support for Google Cloud Platform. Android Studio includes strong code editor and developer tools, versatile build system based on Gradle with a powerful and quick emulator. Google's Firebase offers services to web, unity, android, and ios. The online storage database used for data storage is a NoSQL one. To limit access to the API's interface and monitor usage, API keys are frequently utilised. This is frequently done as a safeguard against misuse or malevolent intent. XML language has been used for the creation of User Interface and Java Language for the backend an internal working of the application. The dependencies of the Google Firebase were added into the Gradle files to connect our application to the database and store user information like, email id, name, residential details, Blood group details, etc.

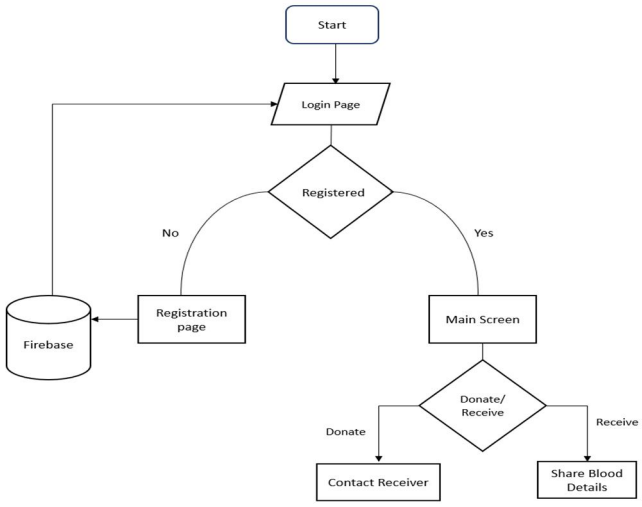


Fig. Process Flow Chart

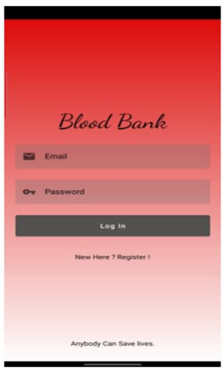


Fig1.:Login Page

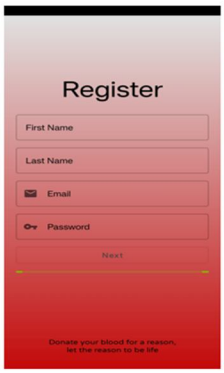


Fig2.:Regestration Page



Fig3.:Main Page

IV. RESULTS AND DISCUSSIONS

Both the donor and the receiver will use the same login, and while enrolling, the donor or receiver must submit personal information as well as some associated information like Blood group, State, district, etc.

By getting in touch with both the donor and the recipient immediately, the app will help shorten the time it takes to find new blood. It also stores data about your blood donations so you can see how much you have donated and when it's time to donate again. one can easily get information about donors from home.

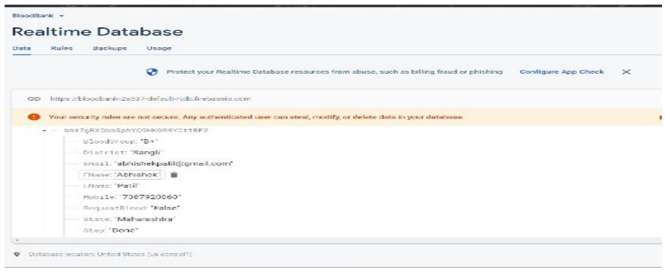


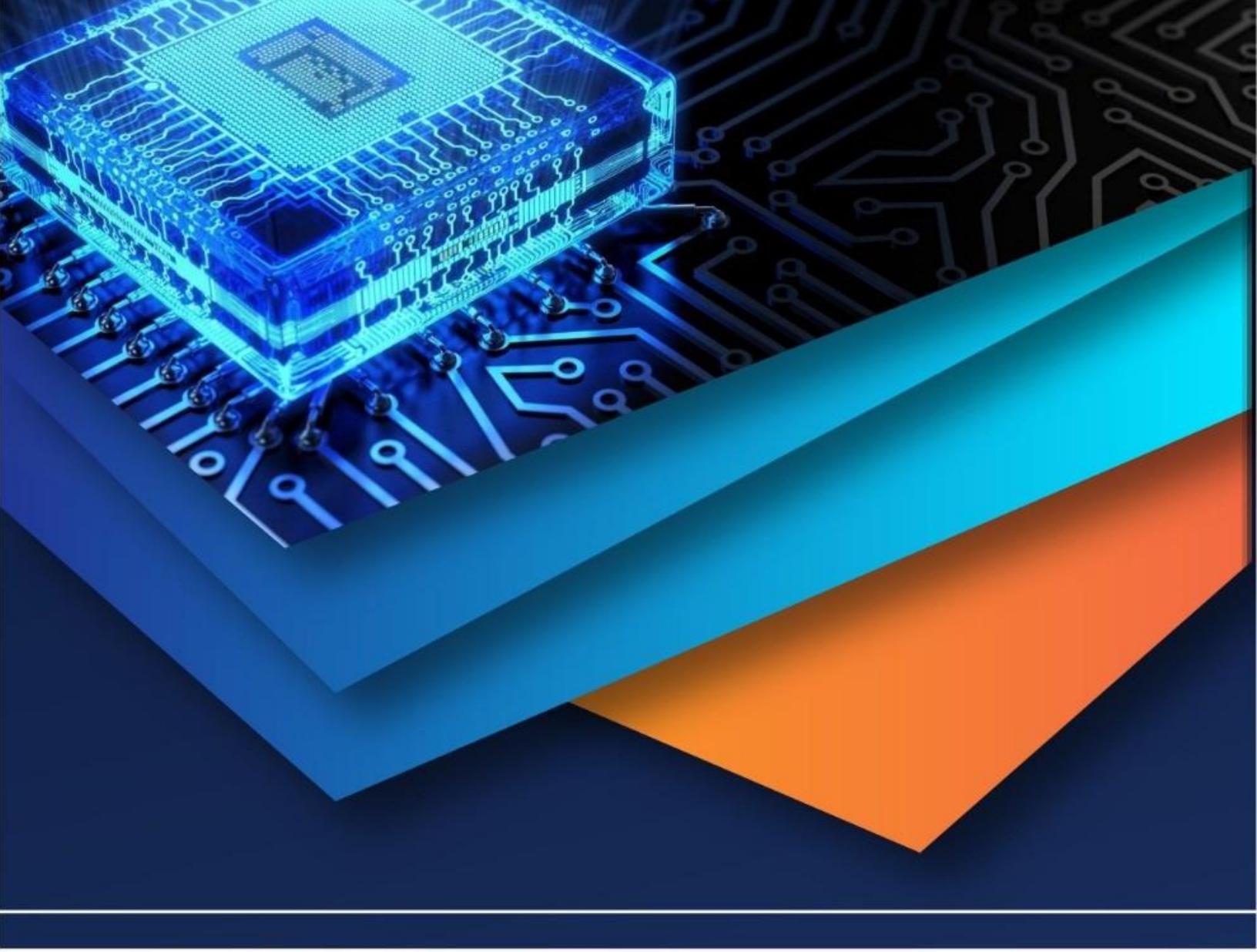
Fig4.: Firebase Database

V. CONCLUSION

Giving blood is the most crucial gift one can give to others in order to save their lives because every human being needs it to survive. Worldwide, there is an urgent need for all blood types. All emergency situations, including accidents, major surgeries, and deliveries, call for a considerable amount of blood. Therefore, a reliable way of finding blood donors is required. Finding blood donors is closely related to their willingness to help out in an emergency recognising the difficulty of identifying the appropriate blood donor worldwide. Studies show that people commonly search for blood donors on social media when they are in need. In the current context, it is difficult to find the right donor at the right time. Because of this, traditional methods are useless, and new medium must be created especially for this purpose. This application would help in finding the appropriate donor fast and conveniently with the least amount of time and effort lost. This application will offer a platform for users to immediately contact willing donors thanks to its calling features.

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