IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

LIFE DROP – BLOOD DONATION APP

[1]Mr.Rahul Ramesh Patil, [2]Mr.Omkar Ganeshrao Garudi, [3]Mr.Ajay Ashvin Masalge, [4]Mrs. Pratibha S. Bihade

[1]Student, [2]Student, [3]Student, [4]Asst. Professor

[1]Computer Engineering,

[1]Gramin Technical And Management Campus, Vishnupuri, Nanded, India

Abstract: The life drop app plays a critical role in meeting the urgent demand for timely blood donations in healthcare emergencies. By integrating the functionalities of an android application, life drop seamlessly connects voluntary blood donors with those facing immediate needs. This innovative platform empowers users to easily request and contribute blood, locate nearby donors, hospitals, blood banks, and healthcare centers. By removing communication barriers, life drop enables direct contact between donors and recipients, significantly enhancing the efficiency of blood donation services. Additionally, the app offers a feature for pre requesting blood, specifying quantity and blood group requirements, and allows users to openly share their requests, expanding out reach to address crucial blood shortages. Life drop is purposefully designed for accessibility, providing an intuitive and hassle-free experience for individuals urgently requiring blood donations, all the android environment.

Keywords **– blood donation, android application, GPS, blood types, flutter, firebase.**

I. INTRODUCTION

According to some reports, India needs 15 million units of blood each year but manages to collect only 11 million units, a deficit of 4 million units. It is also estimated that nearly 12,000 individuals die in India each day, due to non-availability of quality blood. World Blood Donor Day takes place on 14 June each year to raise global awareness of the need for safe blood and blood products for transfusion and highlight the critical contribution made by unpaid, voluntary blood donors. Life Drop is a blood donation app that connects donors and recipients in real time using Firebase and GPS. Life Drop allows users to register as donors or request blood from nearby donors using their location and blood group. The real time availability of blood donor through a user friendly interface significantly reduce the time it take for individual need to connect with suitable donor having detail like name, addresses, contract, information and blood types readily accessible with in the app simple file the process of finding and connecting potential donors. Life Drop notifies donors when there is a blood request within a 5km radius and provides them with the contact details and directions to the hospital or blood bank.

Introducing life drop a grounding breaking invite design to combat India's pressing blood donation challenges in India the demand for blood often surprise its availability resulting in critical shortage that impact countless lives with and increasing need for specific blood types coupled with urgent blood bank and a lack of organized information accessing safe and timely blood donation remain a significant challenges life drop emerges us a become of hope an invite android application aimed at revolutionizing the blood donation landscape in india in a country were every drop of blood counts life drop seeks to create a centralized user friendly platform that contain donor and recipients seamlessly insuring that know life is lost due to the unavailability of blood.

II. METHODS AND MATERIALS

A. Android Studio

It is an IDE, a development interface. It is a kind of work desk for a developer. There you will find our project, its folders, the files in it, and everything you need to finish creating the application. The best thing about Android Studio is that it has been created by Google and was presented just a few months ago, so we are not talking about an old and unrefined tool, but about a very modern program that has also been created by the same people who have created the operating system. Among other things, it has some tools that will greatly facilitate the applications development, such as being able to preview the applications on different smartphones and tablets to know how the code that we are editing is looking, and how it looks in the different types of screen that exist. Although Android applications are written in the Java/Kotlin language, the truth is that afterward, they have to be compiled so that a single .apk file remains. This last step is very simple with Android Studio. Let's say that the new IDE is now much more familiar and easier to use than the SDK that Google had before. In short, thanks to this valuable tool, the work of programmers who have become interested in this fascinating world has been much easier. There are still things to fix and errors to debug but let's remember that Android Studio has not been created for a long time, but it is promising and that it will become an indispensable tool for all those who wish to enter the wonderful world of Android Operating Systems.

B. Visual studio

Visual Studio is a powerful IDE that you can use to create applications and software for various platforms and languages. It provides many features and tools to help you write, edit, debug, build, and deploy your code. You can also collaborate with others using version control and cloud services. Visual Studio supports multiple languages, such as C#, C++, Python, JavaScript, and more. You can also use extensions to enhance your development experience. Visual Studio is available for Windows and macOS, and you can download different editions depending on your needs.

C. Dart

Dart is a programming language that is designed to be **simple, scalable, and productive**. It is used to create web, mobile, desktop, and server applications. Dart supports both **object-oriented** and **functional** programming paradigms, and has features such as **null safety**, **generics**, **async/await**, and **extension methods**. Dart can be compiled to **JavaScript**, **native code**, or **machine code**, which makes it versatile and efficient. Dart is also the language of **Flutter**, a popular framework for building cross-platform user interfaces. Dart is a programming language that can be used to create web, mobile, desktop, and server applications with Material Design, a visual language that aims to provide a consistent and intuitive user interface across different platforms. Material Design is based on the principles of physical material, such as paper and ink, and uses elements such as elevation, motion, shape, and color to convey meaning and functionality. Dart provides a library of widgets that implement Material Design, such as buttons, menus, dialogs, cards, and more.

D. Flutter

Flutter is a cross-platform app development framework that allows you to create beautiful and fast apps for Android, iOS, web, and desktop using a single codebase. It uses Dart, a modern and easy-to-learn language that can compile to native code or JavaScript. It has a rich set of widgets and a powerful UI engine that can render pixel-perfect UIs on any platform. It supports hot reload and hot restart, which enable fast development and testing cycles. It has a large and active developer community that provides many resources and packages. It has access to native features and services through platform channels and plugins. It is open source and free to use. Flutter is suitable for developing apps that require high performance, custom UI, and cross-platform compatibility. Some of the popular apps that use Flutter are Google Pay, Alibaba, eBay, and The New York Times.

E. Firebase real-time database

Firebase Real-time Database is a platform service that allows you to store and synchronize data with our NoSQL database hosted in the cloud. Data is synchronized with all clients in real time and will remain available when your app loses connection. The Firebase real-time Database is cloud-hosted. The data is stored in JSON format and is synchronized in real time with each connected client. When you build cross-platform apps with our iOS, Android, and JavaScript SDKs, all of your clients share a Real-time Database instance and automatically receive updates with the newest data. Another big advantage of real-time Database is that it comes with mobile and web SDKs, allowing you to build your applications without the need for servers. When your users are offline, the real-Time Database SDKs use the local cache on the device to serve and store changes. When the device is online, local data is automatically synchronized. Real-time Database can also integrate with Firebase authentication to provide a simple and intuitive authentication process.

E.1. NoSql

The data in the Firebase real-time database does not consist of tables, but only in the form of JSON documents. The data from the NoSQL database can be placed on another server. The cost of adding a server is much less than the cost of increasing the server capacity. NoSQL databases support Auto Sharding. The data will be automatically balanced between the different servers and the farm. If a server is down, data can be transferred directly to another server. The possibility of server failure is less than in the case of SQL.

E.2. Real-time Database

According to its name, the Firebase's real-time database is real-time, which means that if a user using the application updates the data, then the data from the Google server will be updated immediately, and the system of the Firebase will immediately update all data for all other users using the application.

E.3. Simplifying Back-end Development

The Firebase real-time database only requires us to code to change the database on the client side (web, Android app, iOS app, etc.). While SQL normally requires that we create server side code with server programming languages like PHP, Ruby, etc., it doesn't require that we create any code to change the client-side database (web, Android app, iOS app, etc.).

III. FLOWCHART

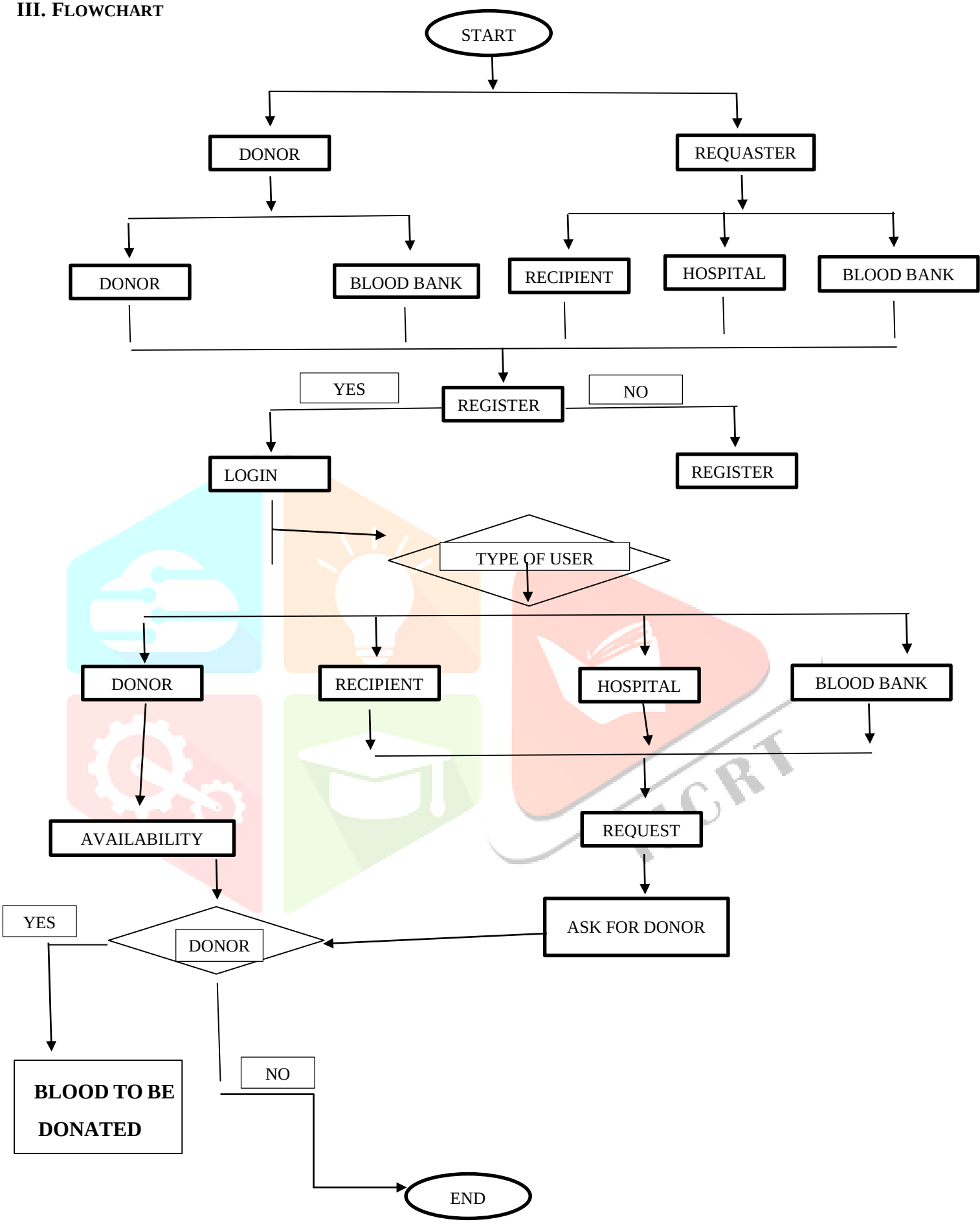

Fig.1 BLOCK DIAGRAM

IV. ADVANTAGES

- The This application shows a complete list of people who want to donate blood.
- Provides instant contact information for all doctors, hospitals and NGOs.
- A facility for anyone wishing to donate blood to register and appear on the blood donor list.
- This application helps to get blood to people in urgent need of blood.
- This helps many families save the lives of their loved ones.
- All information is stored directly in the database, thus avoiding data loss.
- For personal information, sufficient security is ensured to prevent misuse by third parties.

V. CONCLUSION

Life Drop is an innovative app that connects blood donors and recipients in a fast and convenient way. The app allows users to search for donors based on their location, blood type, and availability, and to contact them directly through the app. The app also provides information about blood donation guidelines, requirements, and benefits, as well as a history of previous donations and feedback from users. The app aims to save lives by increasing the accessibility and awareness of blood donation, and by creating a community of voluntary donors and grateful recipients.

VI. ACKNOWLEDGMENT

We would like to express our sincere gratitude towards our guide, Asst. Prof. Pratibha S. Bihade, for the help, guidance and encouragement she provided during the dissertation report. This work would not have been possible without her valuable time, patience and motivation. We thank her for making our stint thoroughly pleasant and enriching. It was a great learning experience and an honor being her students.

REFERENCES

[1] e-BloodBank (ebloodbank.gov.in)

[2] e-RaktKosh:Centralized Blood Bank Management System (eraktkosh.in)

[3] Zomraty: E-Blood Bank Android Application for Donors and Life Savers Mohammed Anis Oukebdane;Samir Ghouali;Karima Ghazali;Mohammed Feham 2020 2nd International Workshop on Human-Centric Smart Environments for Health and Well-being (IHSH)

[4] Life_Saver G. Saritha;T. Saravanan;S. Sivasubramanian;S. Jayavardhini;G. Nandhini;G.V. Princy Yuvanita 2022 International Conference on Power, Energy, Control and Transmission Systems (ICPECTS)

[5] **ANDROID BLOOD BANK** JANUARY 2018 INTERNATIONAL JOURNAL OF ADVANCED SCIENTIFIC RESEARCH & DEVELOPMENT (IJASRD) 7(1):1086-1088

[6]World Health Organization. Published in 2020/06/10 in: https://www.who.int/news-room/fact-she

[7] Ministry of Health and Family Welfare, National AIDS Control Organization Government of India. Name, Voluntary Blood Donation Programme 2007.

[8] M.I Salagar, P.G Kulkarni, S.Gondane, "Promoting and assisting blood donations using mobile application", ICCIC, Dec. 2013, 10.1109/1CC1c.2013.6724275.

[9] Blood Donor Finder, 2016 Google. Available online :The https://play.google.com/store/apps/details? Id = com .Neologix. Blood Donor Finder&hl= en

[10] National Voluntary Blood Services Program (NVBSP). 'HOW OFTEN CAN A PERSON DONATE BLOOD?'. Published onlinein:https://www.doh.gov.ph/node/1425#:~:text=The%20minimum%20interval%20between%202,to%2024%20times%20per%20year. last accessed 2020/11/09.

[11] Diego Fernandez, BiGEEK. 'Introduction to Kotlin'. Published online on 2018/07/31 in https://blog.bi-geek.com/introduccion-a-kotlin/ accessed 2020/11/10 [21] Firebase Documentation, Firebase Console guidelines. 'Firebase Realtime Database'.

[12] Li Y, Manoharan S. A performance comparison of SQL and NoSQL databases. 19th ed.; 2013.

[13] Li, Yishan & Manoharan, Sathiamoorthy. (2013). A performance comparison of SQL and NoSQL databases. IEEE Pacific RIM Conference on Communications, Computers, and Signal Processing-Proceedings.15-1910.1109/PACRIM.2013.6625441.

[14] Stonehem B. Google Android Firebase: Learning the Basics; 2016.

[15] Tutorials | Dart

[16] Install | Flutter

[17] Download Android Studio & App Tools - Android Developers

[18] Download Visual Studio Code - Mac, Linux, Windows

[19] Get Started with Realtime Database | Firebase Realtime Database (google.com)