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Blood Bank Management System with Emergency Blood Locator

Karamjeet Kaur[1], Aman Kumar Rai[2], Namita Raj[3], Preeti Sharma[4], Ria Sirohi[5]
[1]*School of Engineering & Technology, Sharda University, Greater Noida, U.P., 201306, India*
[1, 2, 3, 4, 5] *MGM COET, Noida, U.P., 201301, INDIA*

Abstract: ***The intention of this study is to create a blood management system for Both Android and iOS to help with the administration of blood records, and ease or control the distribution of blood in different parts of the nation based on the hospitals or recipient's demands. Without quick and timely access to donors, this can lead to the death of the patient. If someone needs the blood, then either the person has to go to the blood bank nearby or else he has to buy the blood from the hospital, but if both places don't have the blood of the required group, then finding the required blood group might be a tough task in those critical times. This application will help users find and select nearby source online instantly by tracing their location using GPS, and it will also reduce the time spent to a greater extent searching for blood remotely. A digital donor card will be provided to donors, as well as insurance services. Ambulance services will be arranged in case of an emergency.***
Keywords: ***Blood bank, Donor, Recipient, Android, GPS.***

I. INTRODUCTION

As patients need blood to survive operations, cancer treatments, and for other illnesses. These treatments can only be possible with someone's generous donation. That is why a Blood Bank Management System is required to manage these donations.

The intent of this system is to automate the complete operation of the blood bank. In our project, we are using cross-platform development so that both Android and iOS users can use it to reach nearby hospitals, blood banks, and volunteer donors in an efficient way. This project is developed from four perspectives: hospital, blood bank, volunteer donors, and patient. The application helps to find nearby sources, such as donors, hospitals, or blood banks, online instantly by tracing their location using GPS and also reduces the time to a greater extent while searching for the blood remotely. A digital donor card is provided to donors, and ambulance services are arranged in case of emergencies. Health insurance, along with health-related surveys, is also part of our application.

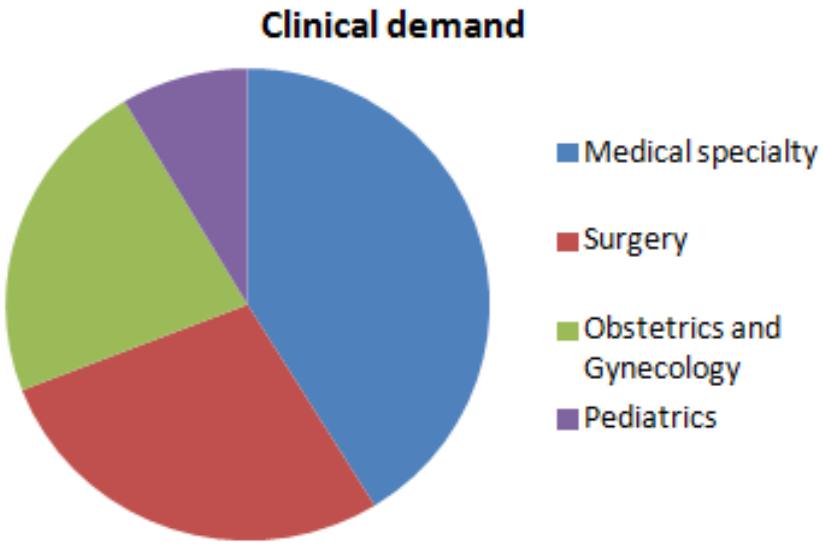


Fig. 1 Clinical demand of blood

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II. LITERATURE REVIEW

These are some of the researchers who have worked over different factors and problems faced by blood banks.

1) A.Clemen Teena, K. Sankar and S. Kannan (2014) suggested to automate complete operations of blood bank. Problems Faced: Day-to-day transactions of bloods in blood banks. Solution Given: Full-fledged Software for managing blood.
2) Ravi Kumar, Shubham Singh, V Anu Ragavi (2017) provided a web application which allows to access the whole information about Blood Bank Management Software. Problems Faced: Blood donor record management. Distribution of blood in various parts of country. Solution Given: Web based blood management information system.
3) K M Akkas Ali, Israt Jahan, Md. Ariful Islam, Md. Shafa-at Parvez (2015) provided simple and quicker interaction among various groups connected with blood groups. Problems Faced: Communication gap among patients, donors, blood bank and hospitals. Solution Given: Web Application.
4) Liyana, F. (2017) developed a web-based blood management system using rule-based decisions. Problems Faced: Availability of blood bags, self life/expiration of blood bags. Solution Given: Web based blood bank system
5) Vikas Kulshreshtha, Sharad Maheshwari (2012) provided comparison of various existing system and idea for improving them. Problems Faced: Data framework for blood banks. Solution Given: Web based data framework.
6) Nozaka,M and Ananda, F.(2016) discusses development and deployment of a system that achieves coordination of activities between blood banks, health centres and donors and their interaction with database. Problems Faced: Blood donors records are not efficiently managed. Solution Given: Web based technologies in managing blood bank information.

A large number of studies have been conducted in the past few years. Despite that various limitations in the studies have been noted. The gender difference is not taken into account when recruiting blood donors. Aside from certain donors frequency preferences for each year has never been a factor in any previous study.

III. METHODOLOGY

This project is aimed to develop a blood bank management system which will manage the records of blood donors and blood banks. This system is a cross- platform app which is compatible for both Android and iOS. The user is in need of blood can register himself in the database by filling the registration form. After registering himself with the database user can make request, search for donors, blood banks/hospitals.

If the user is a donor then after the successful registration he can search for recipients. The donor can apply for a donor card which will be needed every time a donor is going to donate blood. After successful donation donor can fill the form to apply for blood donation certificate. The certificate will be send through their Mail id. All the user information will be stored in the database through API. The database will also store the information of requests raised, donation history, and Ambulance and Insurance details.

Any user who interacts with the application will be asked to register in the database if not already registered. The information of user will be stored in the database. The registered user will need to login by putting asked details. The server validates the user input against the database, and if matches then grant access otherwise generates an alert of request failure. After successful login user can choose between two modules: Donor and Receiver. When the user logout, the server destroys the session and brings user back to the login page. Given below is the diagram of user interaction with the database.

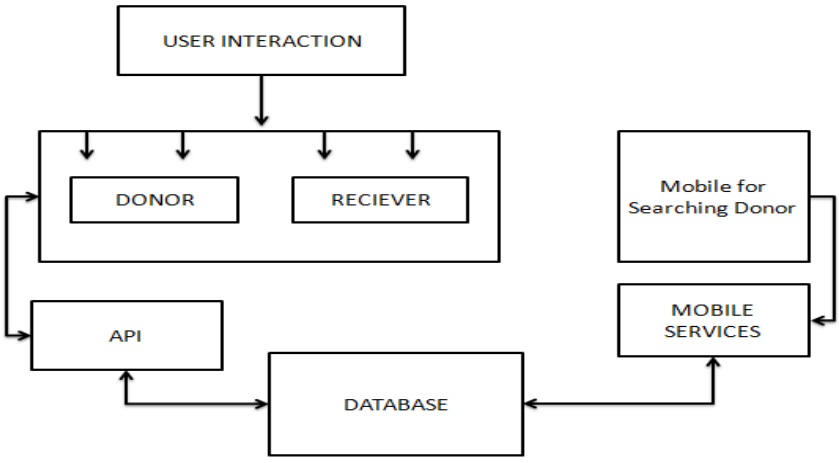


Fig. 2 Methodology Framework of System

IV. SYSTEM REQUIREMENTS

A. *Software Requirements*

1) *Xamarin:* Android and Xamarin, formerly known as Mono for Android. Using Xamarin tools and a participated C# codebase, inventors can produce native Android, iOS, and Windows apps with native stoner interfaces and partake law across Windows, macOS, and Linux. It is used in our project for frontend purpose.
2) *C#:* A general- purpose, high-position programming language that supports several paradigms is called C#(pronounced" sharp"). It can be use to develop native apps for Android, IOS and Windows. It is used in our project for backend and interactivity purpose
3) *SQL:* Structured Query Language, shortened as SQL, occasionally "effect" for literal reasons, is a sphere-specific language. It's especially helpful when managing structured data, or data that includes connections between realities and variables. It is used in our project to create the database for user login, donor history, signup , insurance , ambulance service etc.
4) *Visual Studio:* It's an Integrated Development Environment (IDE) introduced by Microsoft. It's used to produce computer software which includes websites, web apps, online services, and mobile operations. We have used Version 17.5.5 (2022).
5) *API:* Application programming interfaces, also known as APIs, are a collection of rules that describe how hardware or software can connect to and communicate with one another. A REST API is a web application programming interface that follows the representational state transfer, We have used API in our project to integrate the data in our project.

B. *Hardware Requirements*

1) *RAM 4GB*
2) *Processor Intel ® Core ™ i5*
3) *WINDOWS 10 64-bit OS*

V. RESULT AND DISCUSSION

The application developed is a cross-platform app, compatible with both Android and iOS. The application developed has an attractive framework which is required for clients with poor gadgets.

The first activity screen of any application where every user lands to is the Login Page. New users will register themselves , the data given by user will be stored in the database while the registered user might login to their account. After login successfully home page will appear to the user.

The user will choose the donor option. A form of questions will appear to the user before proceeding which will decide whether the person is fit or eligible for donation or not. The eligible donor can proceed further and can interact with requests raised by the patients. As shown in Fig.6 below. The user will choose receiver option and can raise request as per the blood group needed. Both the user can have the benefit of ambulance service and insurance service.

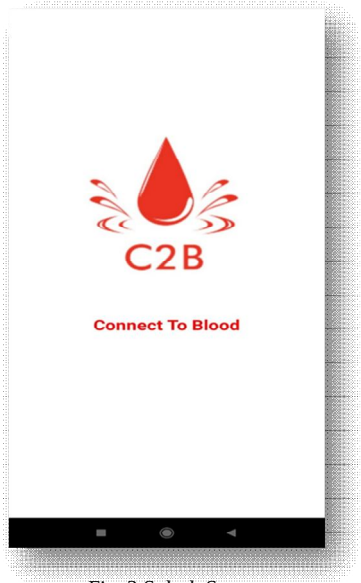


Fig. 3 Splash Screen

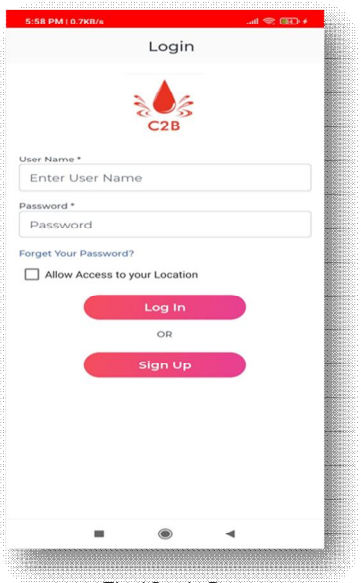


Fig.4 Login Page

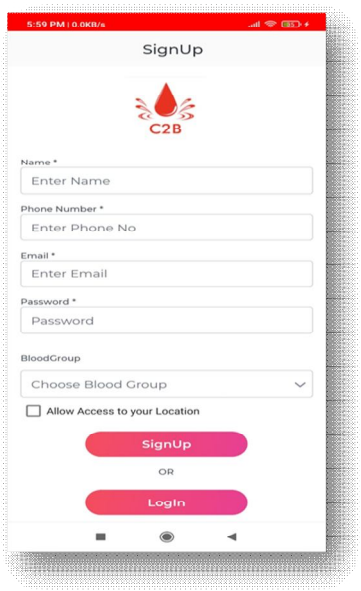


Fig. 5 Sign Up Page

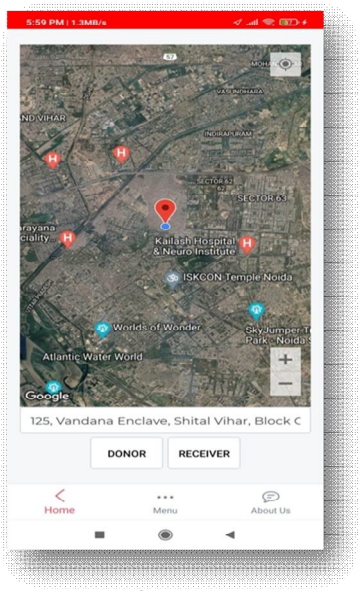


Fig. 6 Home Page

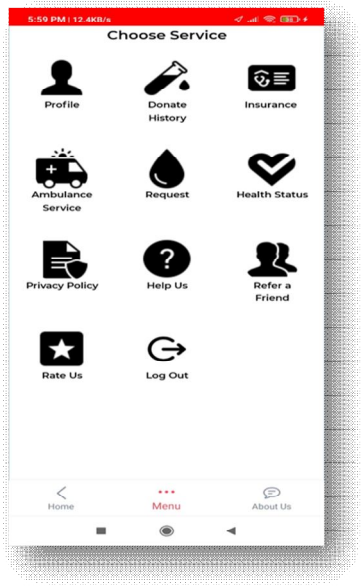


Fig. 7 Menu Page

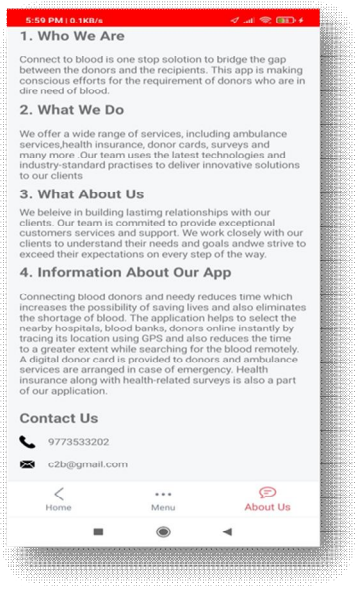


Fig. 8 About Us Page

VI. CONCLUSION

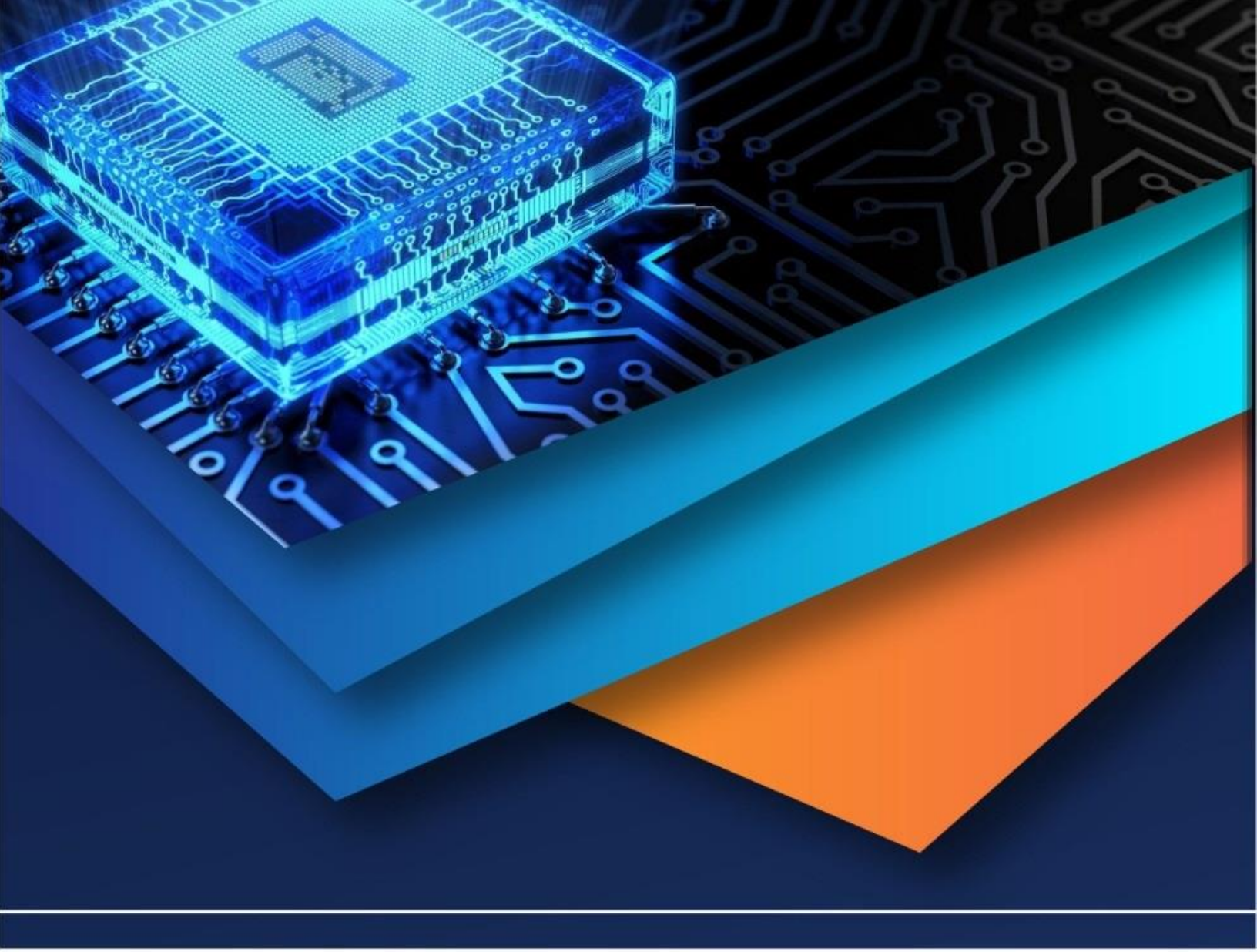
The A Blood Bank Management System is an application developed *to help with the administration of blood records.* This project proved good for me as it provided practical knowledge of not only programming but also about all handling procedures related with blood banks. It also provides knowledge about the latest technologies used in developing android applications that will be in great demand in future. This will avail better chances and direction for independent project development in the future. This project has given us an ample opportunity to design, code, test and implement an application.

This has helped in putting into practice various Software Engineering principles and Database Management concepts like maintaining integrity and consistency of data. Further, this has helped us to learn more about XAMARIN, C-SHARP, SQL, .NET. This paper explained the proposed Blood bank system, which linked the blood bank with the donors by sending messages to the donor who registered in the blood bank as a constant donor. To let them know of a shortfall in one of the blood groups both by his team. This application can be used by the blood bank employee through smartphones whether an Android or iOS user. It is characterized by ease of use in handling blood donation.

REFERENCES

[1] "The Study on Blood Bank Management System" by A. Clemen Teena, K. Sankar and S. Kannan (2014) https://www.idosi.org/mejsr/mejsr19(8)14/21.pdf
[2] "Blood Bank Management System" by Ravi kumar, Shubham Singh, V Anu Ragavi (2017) https://www.idosi.org/mejsr/mejsr19(8)14/21.pdf
[3] "Blood Donation Management System" by K M Akkas Ali, Israt Jahan, Md. Ariful Islam, Md.Shafa-atParvez (2015) https://www.ajer.org/papers/v4(06)/O04601230136.pdf
[4] "Blood Bank Management using rule-based method" by F. Liyana http://greenskill.net/suhailan/fyp/report/038077.pdf
[5] "Blood Bank Management Information System in India" by Vikas Kulshreshtha, Sharad Maheshwari (2012) https://www.ijera.com/papers/vol%201%20issue%202/012260263AF.pdf
[6] "A Blood Bank Information Management System a case study of the Kenya National Blood Transfusion Services." by Nozaka,M and Ananda, F. (2016) https://sri.jkuat.ac.ke/jkuatsri/index.php/sri/article/view/108/91

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