S.D.M.E Society's

SDM COLLEGE OF ENGINEERING AND TECHNOLOGY DHAVALAGIRI, DHARWAD 580002

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DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

Synopsis On

RAKTDAAN ANDROID PROJECT

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SUBMITTED BY,

Project ID: 9

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5th semester B.E Academic Year 2023-24

RAKTDAAN ANDROID PROJECT

ABSTRACT

The "Raktdaan" Blood Donation App is a mobile application designed to revolutionize the way blood donation and distribution occur in our society. With the aim of addressing critical blood shortage challenges, "Raktdaan" connects blood donors, recipients, and blood banks seamlessly, promoting a culture of regular blood donation and saving countless lives. "Raktdaan" leverages location-based technology to connect blood donors with recipients in need within their proximity, facilitating faster and more effective blood donation drive. With user-friendly features such as donor registration, real-time blood requests, hospital and blood bank integration, appointment scheduling, education and awareness along with privacy and security, “Raktdaan” aims to cultivate a strong and engaged community of donors, making blood donation a simple, convenient, and life-saving experience for all.

INTRODUCTION

Blood donation is a process where a person donates blood voluntarily to save a person’s life in critical condition or a blood bank. In a world where medical emergencies and surgeries are an everyday occurrence, access to a stable and readily available blood supply is critical. Hence, we came up with an innovative idea of blood donation app "Raktdaan" which encourages, engages and motivates potential and existing donors. The platform needed to make the donation process more convenient and the experience more rewarding. This innovative mobile application seeks to bridge the gap between potential donors and patients in dire need of blood, making the process of blood donation more accessible and convenient than ever before. With its user interface, geolocation features, rewarding donations our project poised to bring about a typical example in the way we approach and participate in lifesaving blood donations.

Nowadays, several blood apps are accessible in play store, however their utilization is extremely poor owing to disadvantage of privacy and safety. Donor Contacts may be simply accessed by everybody. All apps that are accessible focuses the property between the donors and therefore, the recipient at fewer intervals. Our project was created to protect the donor's privacy and donor identity, as well as the recipient's safety. The proposed solution attempts to provide support for both emergencies and reserved time things. This mobile application, centralised for blood donation, allows NGOs and Hospitals to find blood donors in their neighbourhood. All information on the blood donor details will be included in the application. Our application allows authorised users to create request on the status of donor for blood donations in the nearby area.

Our project aims to develop a user-friendly and efficient mobile application for blood donors and recipients.

PROBLEM STATEMENT

The existing blood donation system faces significant challenges in efficiently connecting donors with recipients, resulting in critical shortages during emergencies and an inefficient utilization of available blood sources. Our project aims to address these issues by developing the "Raktdaan" app, which seeks to revolutionize the way blood donation is conducted, making it more accessible, organized, and responsive to the ever-present demand for blood.

SOFTWARE REQUIREMENTS

- Android Studio for coding, testing, and debugging
- Programming Language like Java or Kotlin for Android app development.
- Integrate GPS for donor and recipient location tracking.
- Real-time alerts for donor availability, urgent requests, and appointment reminders using Firebase Cloud Messaging (FCM).
- Database Management technologies like MySQL etc. are required for cloud synchronization of user profiles, medical history, and blood group information.

OBJECTIVES

- To enable users to register as blood donors, providing their contact information, blood type, and eligibility details.
- To let donors to schedule appointments for blood donations, reducing wait times and streamlining the donation process.
- To provide a feature for hospitals and individuals to send out emergency blood requests, allowing users to respond quickly.
- Ensuring screening of user's eligibility to donate blood based on factors like recent donations, medical history, and travel & recent activities.
- To enable donors to track their donation history, including the date, location, and quantity donated.

PROPOSED METHODOLOGY

The methodology for our project will focus on efficiency and rapid development to meet the objectives of creating a user-friendly and functional app for connecting donors with recipients while promoting blood donation awareness. Our methodology begins with extensive requirements gathering, delving into the specific needs of blood donors, recipients, and healthcare organizations. In terms of technology, we employ Java and Kotlin for frontend development, creating a visually appealing and user-friendly interface. On the backend, we set up a robust infrastructure consisting of servers, databases, and APIs. We prioritize data security. Geolocation integration is a pivotal feature, allowing users to find nearby blood donation opportunities, blood banks, and hospitals in need of blood. A sophisticated donor matching algorithm is at the heart of the app, connecting donors with recipients based on factors like location, blood type compatibility, and the urgency of need. Ongoing user feedback, data analysis, and regular updates are prioritized to enhance functionality, security, and user experience.

It includes three modules

1.First time users

- The user of the application has to sign up by entering his/her email, providing other mandatory details when he/she uses the app for the first time.
- The registration module is used to collect users (above 18 years of age) personal details like name, Blood type, Mobile Number, User Location, User government ID proof, User Image, Upload, Address, Gender, and Date of birth.
- A registered user can volunteer for blood donation and get alert messages on blood donation programs in their locality.

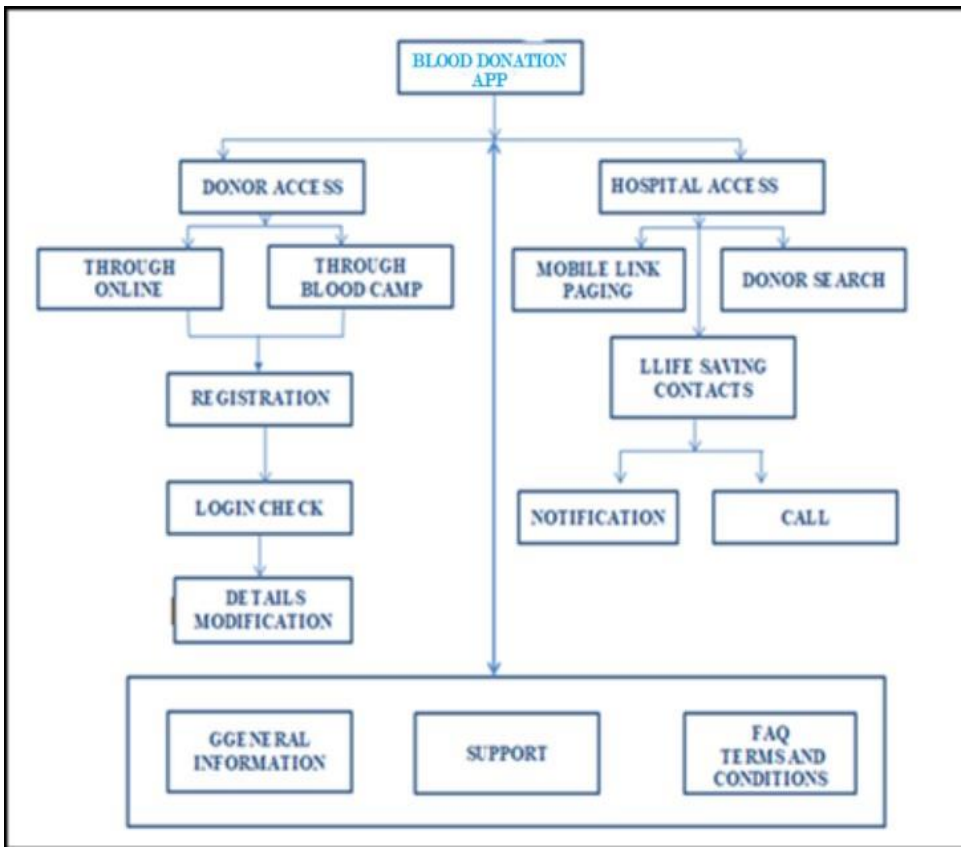
2.Hospitals/Blood banks

- The hospital or the blood bank approved by the government can register in this app and create their account. They can advertise blood donation camps/programs to the users and donors registered.
- Add first-time donor information in the contact book and also update their blood donation details each time along with medical particulars including donor’s weight, height, blood group, date of blood donation, donation type – whole blood, platelets etc., comorbid conditions, medication details etc. This ensures the reliability and security of the app.
- Search for donor based on blood group, nearby location (default maximum radius of 50 km, can be modified if no donor found) using geolocation features in case on shortage of blood during an emergency.
- Send a message or call the donor via the app during an emergency.

3.Donors

- A donor is a person who has donated blood at least once. A user is updated as a donor either by a hospital or a blood bank after their first blood donation.
- Donor can keep track of blood donations made.
- Eligible Donor will receive special blood shortage alert messages or call from any hospital or blood bank during emergency.
- Donors will get notified on blood donation camps/programs in their nearby location within the radius of 50 km, only when they are eligible after a donation as per guidelines. This avoids unnecessary alert messages to the donor.

Flow Chart



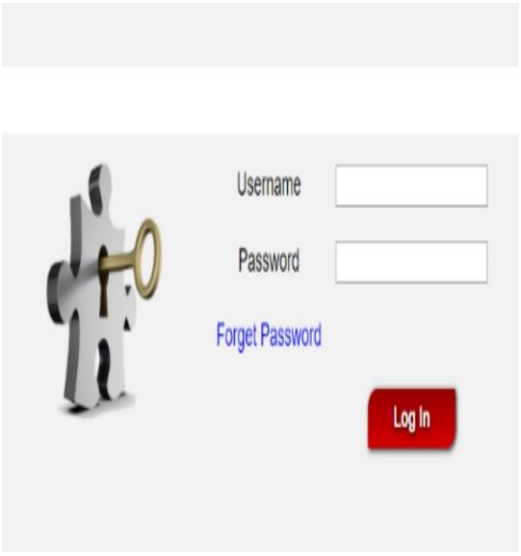
EXPECTED OUTCOME OF THE PROPOSED WORK

Authentication Module

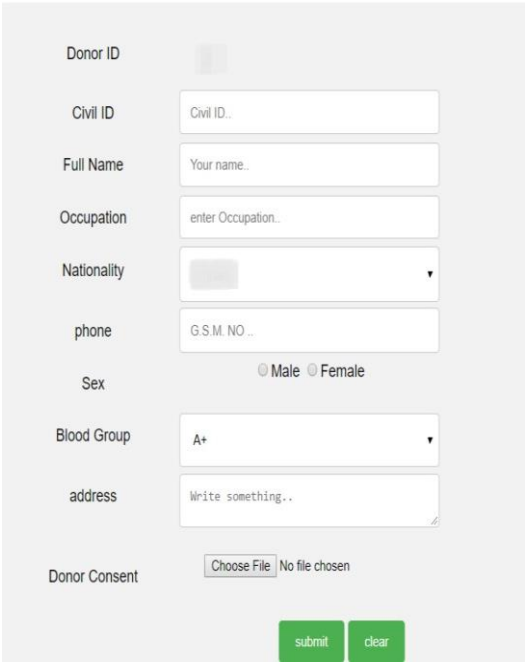
- Sign Up
  - New user or donor can create an account to use in the blood donor application and create a password for account verification and create an identity.
- Log In
  - Donor Login to the account for viewing or editing location details and any other personal information.
- Forgot Password
  - If donor forgot their password, they have an option to reset their password.
- Change Password
  - If donor want to change their password, they have options to change their password.
- Account Verification
  - If donor changes their password or if they forget the password then we have to verify their account using mail verification.

Demo Screen Layouts

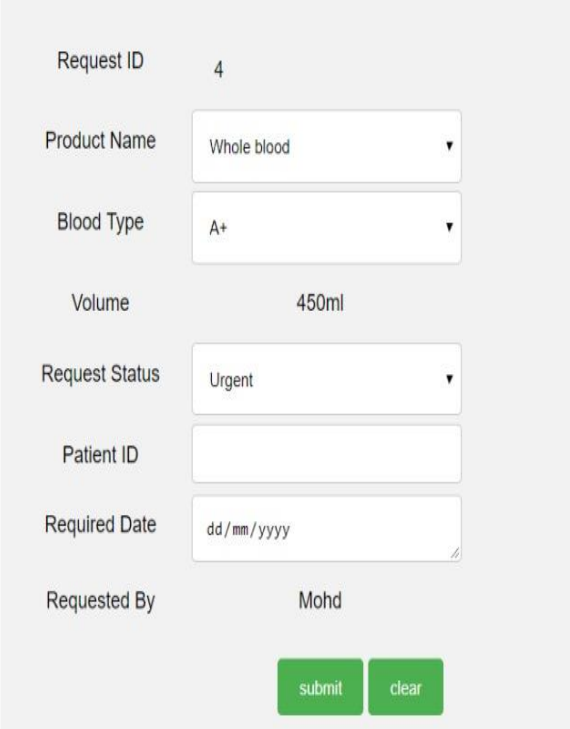
These are Demo screen layouts of which we want use into our project



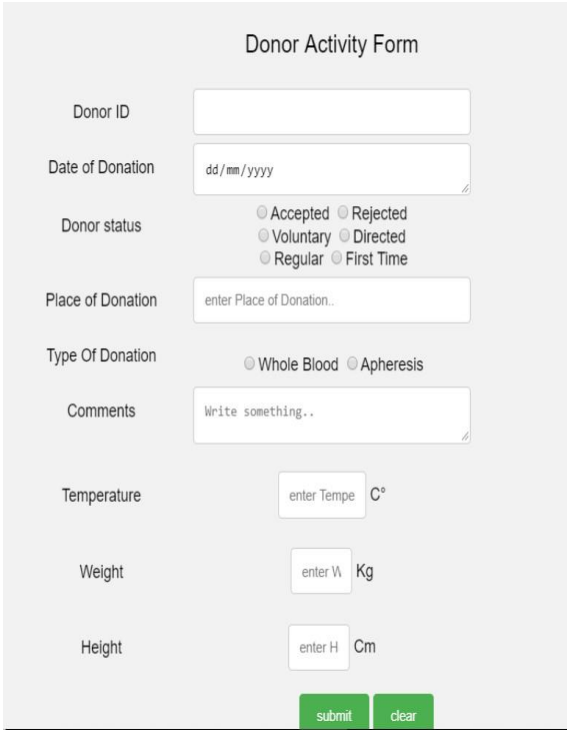
User Login Page



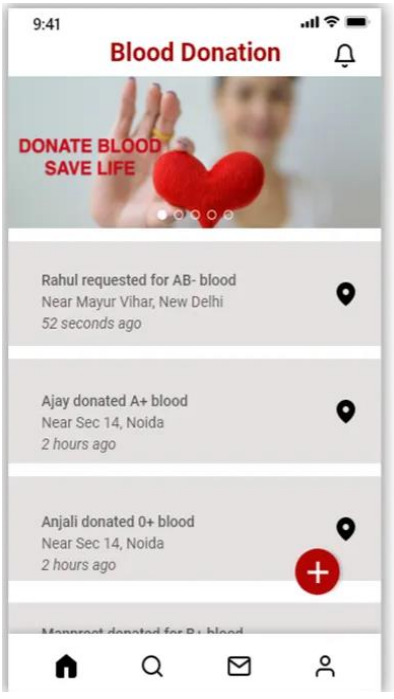
Registration page

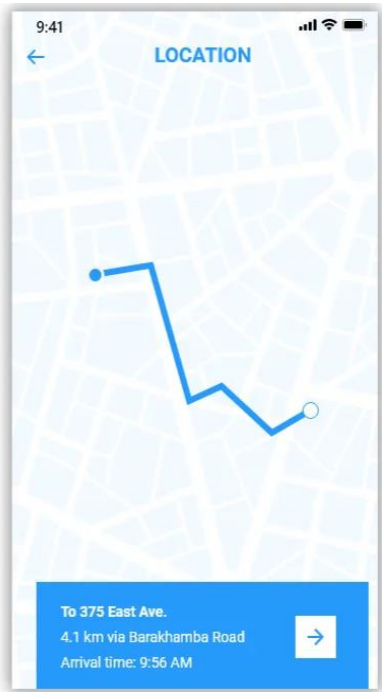


Request Page



Donor Activity Page





Donor Location Page

APPLICATION

- Enable hospitals, medical facilities, and patients to post urgent requests for specific blood types, which donors can respond to
- Help users find nearby blood donation centres, blood banks, and mobile blood drives, making it easier for them to donate blood
- Allow donors to schedule appointments for blood donation, reducing waiting times and improving the efficiency of blood collection efforts
- Offer incentives or rewards to encourage regular blood donation, such as badges, certificates, or recognition
- Provide information about the importance of blood donation, the donation process, and health guidelines for donors
- Create a community of donors and recipients, fostering a sense of unity and social responsibility

CONCLUSION

In conclusion, the development of "Raktdaan" App is guided by a structured methodology that places users' needs at the forefront. By employing cutting-edge technologies and techniques, adhering to data privacy regulations, and adopting a user-centric approach, we aim to create a dynamic and effective platform that not only connects blood donors with recipients but also plays a pivotal role in promoting and facilitating life-saving blood donations.

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