

MedCare-Android Based Medical Services Application

Tukaram Dethe¹, Vaishnavi Nanna², Aarti Mali³, Vaibhavi Patil⁴,
Vibhuti Pawar⁵, Poonam Bhandare⁶
SVERI's College of Engineering, Pandharpur, India

Abstract: For the provision of immediate information about the available medical facilities of the nearby hospital; there is a need for a system that can provide assistance as well as be able to perform the tasks or be able to fulfill the desired requirement of the patient. The system should be able to provide services such as maintaining the information about the available beds according to the category so that patients or users can know about the bed availability in the particular hospitals. MedCare an android based application contains the features or functions which can provide better assistance in finding the desired hospital. With the assistance of this application, a patient or user can book a bed according to the availability in the respective hospital. The additional feature of the MedCare application is that it provides the facility of the Ambulance Drivers so if the Patient wants to book the ambulance the user can identify the nearby ambulance and can communicate with the driver directly. This application also benefits the hospitals and users. It helps to track records of all the things such as booked beds, booked appointments, etc. The application is designed and created in a way that application is feasible and easy to use for both users and the administrators also.

Keywords: smartphones , android_application, ambulance , blood_bank, MedCare

I. INTRODUCTION

In emergency conditions it is difficult to check the availability of beds in the different hospitals, and call a hospital to check for an ambulance or for blood bags in emergencies. Booking an appointment with the doctor according to their availability is also a time-consuming task[4][5]. To avoid such circumstances the android based application will be formed. The proposed project is an attempt to provide patients or any user an easy way and an all-in-one solution for booking a doctor's appointment online, checking for nearby hospitals, looking for ambulances, and searching for blood availability at blood banks. Medical appointments and consultations are necessary for the field of medicine which gives the doctor the opportunity to access, examine, test, and diagnose a patient with an disease[3][2].The application provides the facility of order the blood from the blood bank ,call the driver of ambulance and view` nearby hospitals.If a patient or user wants to look for the required blood of the respective blood group and the availability of the blood it is a hectic task to call or look for it in all blood banks[1]. MedCare is an application that is developed in such a way that any patient can get access to the functions and can operate the application easily. This application provide the facility to view registered patient history and notification that the appointment is booked. In the blood bank also patient get the notification that the hospitals have the availability of ordered blood group or not. The administrator also can get access to all the integrity constraints and as well as get and modify the data[3].The study adopted an object-oriented analysis and design approach and implemented the mobile application using an android studio which is an integrated development environment (IDE) developed by Google, and JAVA was used as the choice of programming language for the logic and the backend, XML is used for the frontend implementation and database used is realtime firebase database

II. PROBLEM STATEMENT

To create an android based application which can provide the medical services such as getting information about the administration facility and booking appointment of a doctor, availability of ambulances and also the information regarding the stock of the blood in the respective blood banks

1. ER Diagram of Administration Flow

This diagram represents the required flow of the key modules of the MedCare Application. The module flow diagram shows the actual flow of the application from the side of the administrator.

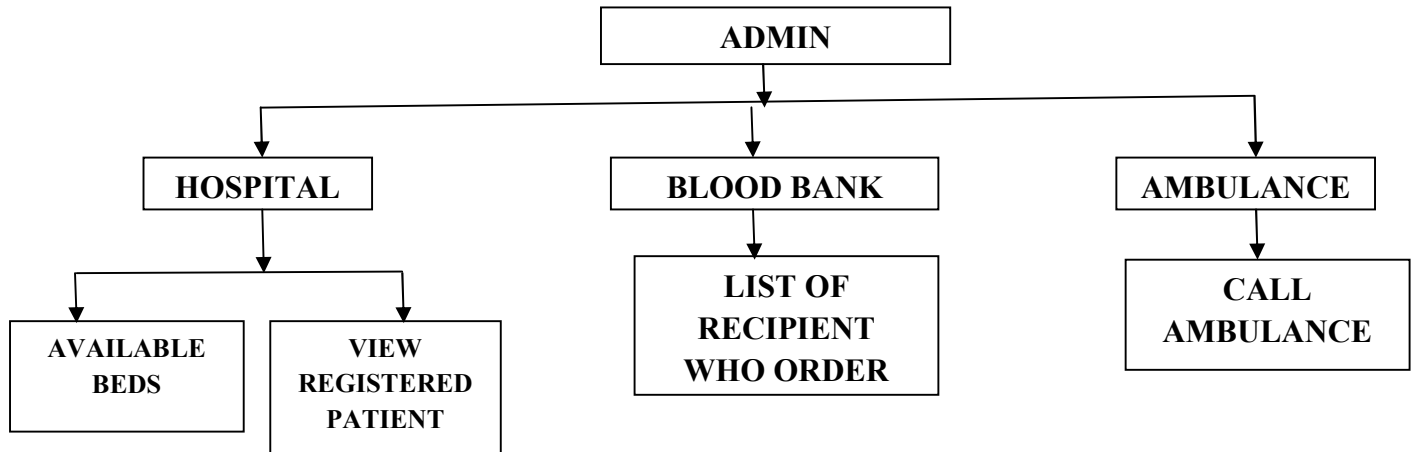


Fig 1 : Admin Flow Diagram

2. ER Diagram of User Module Flow

This diagram represents the flow of the user module and the submodule i.e. Ambulance and Hospital.

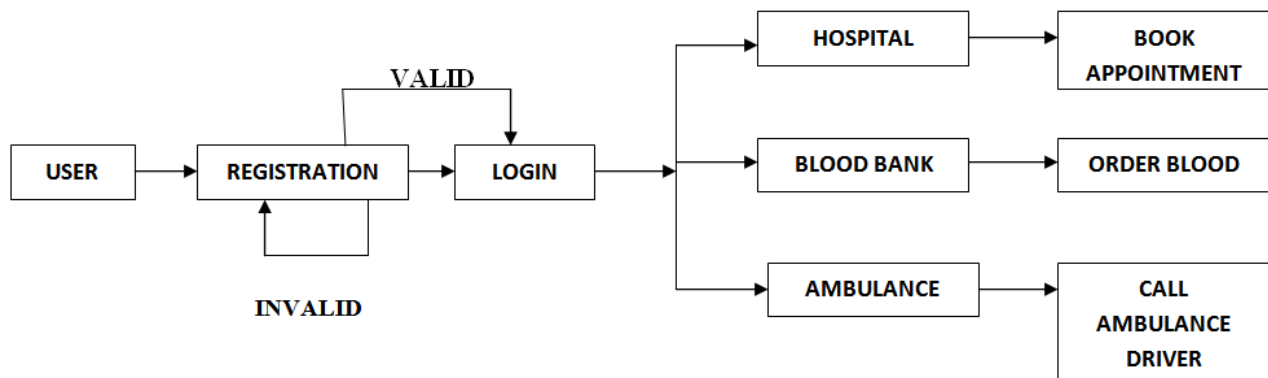


Fig 2 : User Flow Diagram

DIAGRAM DESCRIPTION

- Admin Login: Admin login is provided in the admin module. There is only one unique admin with the unique admin id. Only the admin is authorized to register the hospital and add the details of the ambulance.
- Ambulance: In this module, the main administrator will add the Ambulances into the systems with the proper required details. And user can call to the ambulance.
- User Registration and Login: Any new user can register themselves with the help of proper required unique user mail, etc. After successful registration and login user will be able to see all the details such as hospital details, details of admission facility, blood bank, and ambulance.

III. LITERATURE SURVEY

The application-based medical services available today work with only one set of problems each. Web applications are present to book an appointment for a doctor but are reserved for only one hospital. Web applications for various different blood banks are presently created by the Banks themselves. An emergency ambulance booking service is

available that provides a contact of the ambulance closest to the user[5]. A system working with all aspects of the medical field at once is not available. Zhan & Liu (2013) “Design and implementation of a clinic appointment registration system”, designed and implemented a desktop-based .NET application for clinic appointment registration with the use of MS Access as the database for keeping medical records[3]. In this thesis present study area is studied and problems faced by emergency service providers on road network are identified. In this thesis GIS/GPS/GSM based prototype system has been developed for routing of ambulance on road network of Hyderabad city (AMS)[8].The rapid growth in Information & Communication Technology (ICT), and the power of Internet has strongly impacted the business and service delivery models of today’s global environment. E-Hospital Management Systems provide the benefits of streamlined operations, enhanced administration & control, superior patient care, strict cost control and improved profitability [6]Blood donation is the main source of blood resources in the blood banks which is required in the hospitals for everyday operations and blood compensation for the patients. In special cases, the patients require fresh blood for compensation such as in the case of major operations and similar situations[9].The operational function of the system includes appointment registration, data management, and data backup and recovery. “Assessing the Online Outpatient Booking System” by MahnazSamadbeik, MarziehSareimian, Ali Garavand, NegarHasanvandi, SaharSanaeinasab, and HadisTahmasebi says, it is recommended to consider the following features in available appointment-making websites as well as in the design of new websites: possibility to change the appointment time, registration of user’s email, personal address for emergency calls, patients’ phone numbers for emergency contacts, passport number and date of expiry of visa for foreign nationals, reference number, blood group, and upload medical case.

IV. RESULT

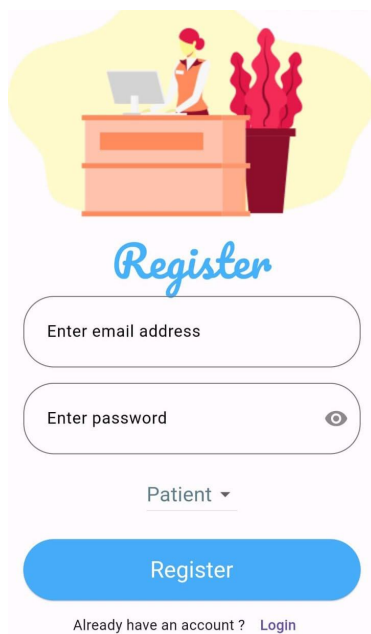


Fig 1. Patient can register with their email id and Password application

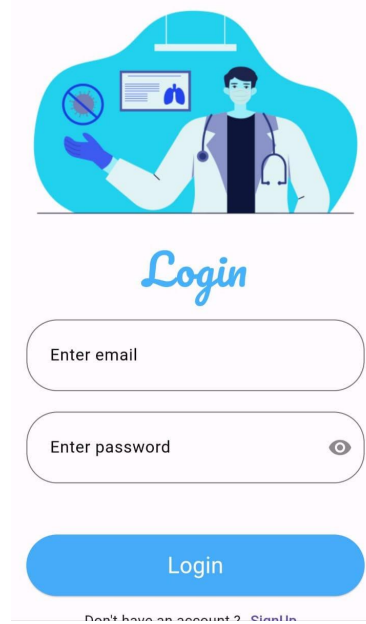
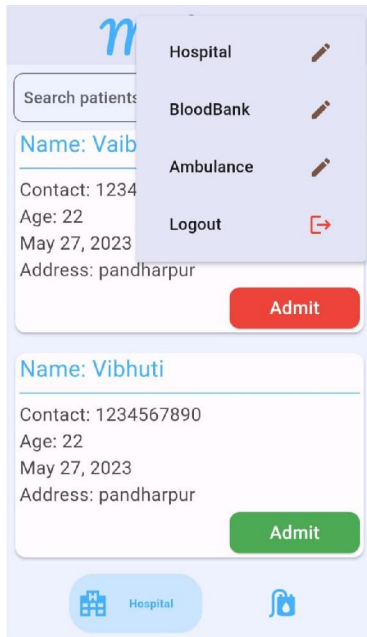


Fig 2. Registered Patient enter into the via email id and password



Search patients

Name: Vaib

Contact: 1234

Age: 22

May 27, 2023

Address: pandharpur

Hospital

BloodBank

Ambulance

Logout

Admit

Name: Vibhuti

Contact: 1234567890

Age: 22

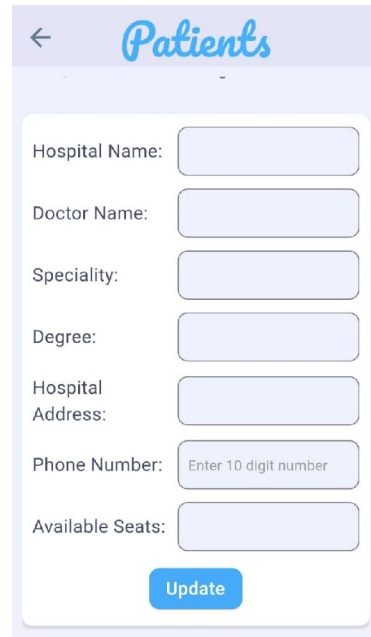
May 27, 2023

Address: pandharpur

Admit

Hospital

Fig 3.Admin side facilities
Hospital Name



Patients

Hospital Name:

Doctor Name:

Speciality:

Degree:

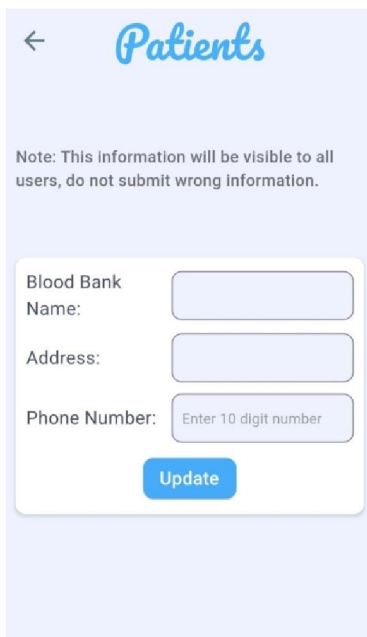
Hospital Address:

Phone Number: Enter 10 digit number

Available Seats:

Update

Fig 4.Only admin can add the



Patients

Note: This information will be visible to all users, do not submit wrong information.

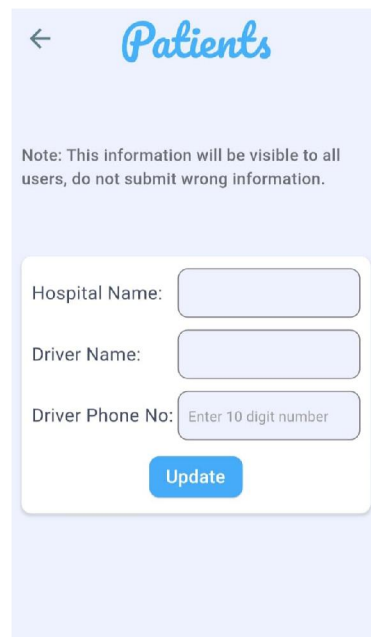
Blood Bank Name:

Address:

Phone Number: Enter 10 digit number

Update

Fig 5.Admin can add the blood bank
name of an ambulance



Patients

Note: This information will be visible to all users, do not submit wrong information.

Hospital Name:

Driver Name:

Driver Phone No: Enter 10 digit number

Update

Fig 6.Admin can add the hospital

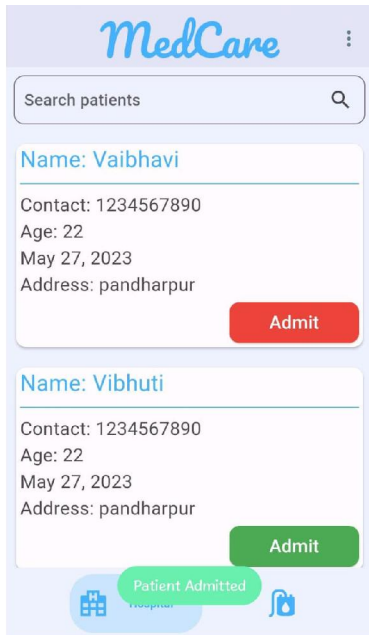


Fig 7. Admin view of patients's requested appointments

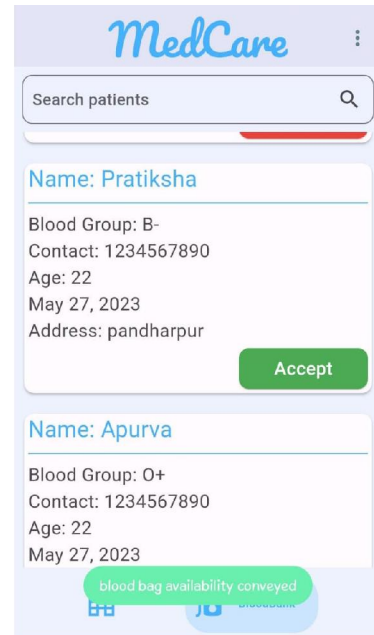


Fig 8. Admin view of patients's ordered blood

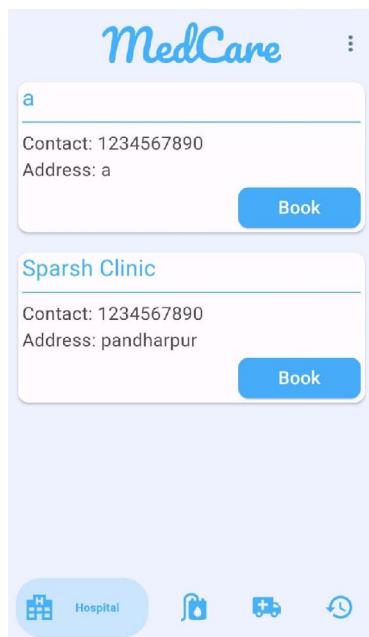


Fig 9. Patient's hospital view and he can book the appointment

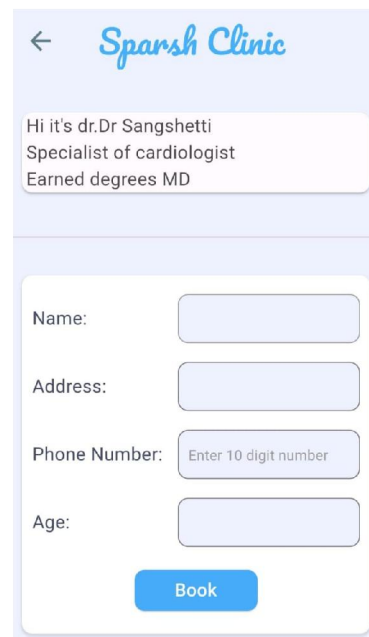


Fig 10. In the patient's Book section patient can add these details

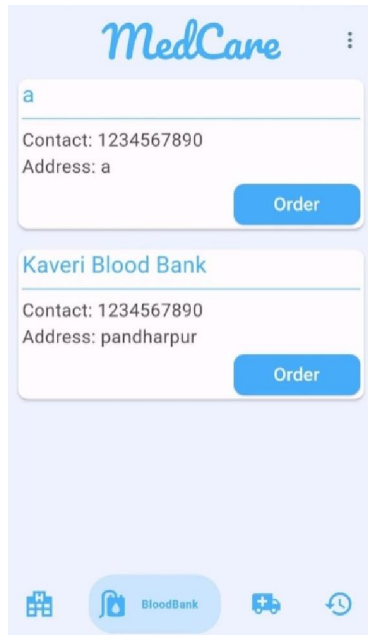


Fig 11. Patients's blood bank view in which he can

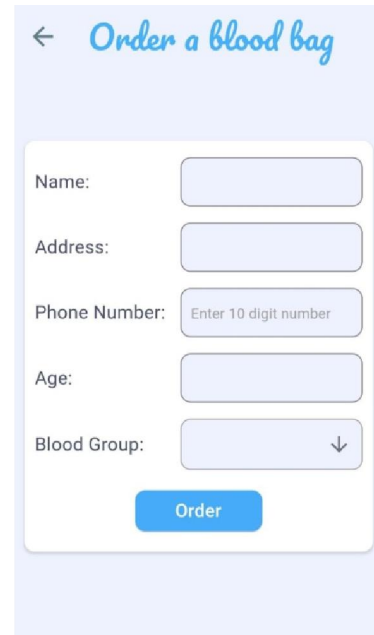


Fig 12. Order section of the blood order the blood

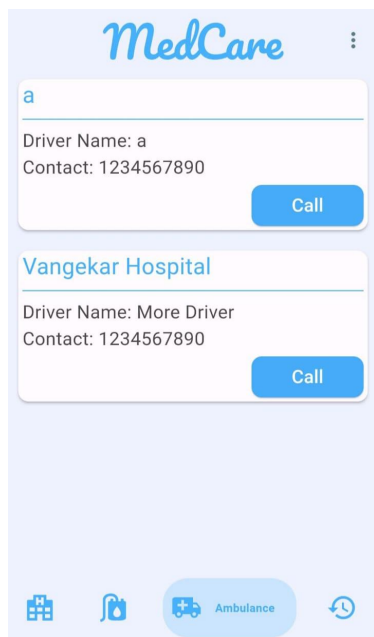


Fig 13. Patient's ambulance view And it provides the facility of call

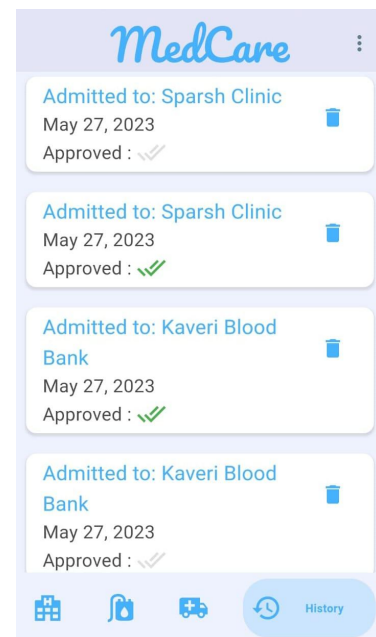


Fig 14. Patient's history of booked appointment and ordered blood

V. CONCLUSION

Users of the application can access nearby medical services, including ambulances and hospitals. Also, the application allows users to search for and book appointments with the doctor. The system will also reduce the stress and fatigue patients feel while waiting in line to see a doctor. Moreover, the research facilitates the integration of live consultations

between doctors and patients anywhere and anytime. This will help hospitals and doctors improve their reach and provide patients with quick support. The patient or family member can book an ambulance in the event of an emergency rather than wait around for an ambulance which can waste precious time. The application ensures that people are always close to medical help whenever they need it.

VI. FUTURE SCOPE

While MedCare is currently in its development phase, it gives assurances about what is to be expected. There is still room for improvement in implementing the system in real-world scenarios. Further new features can be added to the application such as

1. Online Consultation.
2. Connecting Pathology labs to the app avails users to book appointments on the app and get notifications once reports are done.
3. Providing an ambulance driver with the shortest possible route once booked by a patient.
4. Showing the ETA of the ambulance to the patient.
5. Suggesting the nearby hospital to the user based upon the current location.
6. Payment option(If required).

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