
MEDICAL-DIAL: An android application for medical emergencies

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Abstract.

Medicine wastage is one of the most serious and under-appreciated issues in today's healthcare. One of the major concerns is the wastage of pharmaceuticals that may be utilized for patients in emergency situations because prompt availability of these drugs can save a life. Along with this, alarming medical emergencies where there is a lack of synchronization between the blood donors and hospitals and the blood banks can cost a life. The immediate requirement of blood supply to the spot of requirement is always difficult to arrange. Thus, Medical- Dial is a one-stop solution for this issue. MEDICAL-DIAL is an android application that caters to all kinds of medical emergencies. A community-based blood and medicine donation app built on Android Studio and Firebase Realtime Database. MEDICAL-DIAL is an attempt to ease the process of blood and medical emergencies by connecting blood donors and drug vendors directly with people in need of blood and medicines. MEDICAL-DIAL connects blood donors and drug vendors with recipients, without any intermediary such as blood banks and pharma stores, for an efficient and seamless process.

Keywords. Blood seeking, Medicine Donation, Medicine seeker, Blood donation, Medical News.

1. INTRODUCTION

In today's world there are many problem related to medical facilities and requirement provided. From people not being able to afford medicines to unable to find matching blood group during emergencies. Our app is built to resolve such issues.

For instance, sometimes customers buy medicine in bulk without taking into consideration their requirements and their validity. In such cases our app MEDICAL-DIAL, helps people who have extra medicines to donate it to the people in need of those medicines before they expire. This prevents wastage of medicines which could have saved a life if provided on time.

Our App also allows people who are willing to donate the blood to register themselves. In case of medical emergencies where blood is required, using our app the patient can look for the donor belonging to their blood group.

This app allows scanning the image of a medicine to verify the authenticity of its expiry date and strength, as specified by the medicine provider. If either of the values does not match or is unavailable, the user's medicine will be rejected. Our app also provides news about medical inventions, new technology development and other context related to medical fields. To ease the use of this application there is a separate section containing FAQs and helpdesk contact.

2. LITERATURE SURVEY

Healthcare applications (app) have the capacity to improve everyday medical exercise by incorporating proof based healthcare tools. The purpose of this research is to describe the primary features of Android-based healthcare apps on Google Play and to identify the ones which can be proof-based totally. For the purpose of our studies, only the best free apps had been taken into consideration [1][8]. Aside from the overall traits, numerous criteria touching on interactivity, functionality, aesthetics, contents, benefits, and evidence-based totally aspects had been taken under consideration. The use of cellular devices by using fitness care specialists (HCPs) has transformed many factors of medical practice. The use of mobile devices by health care professionals (HCPs) has transformed many aspects of clinical practice [10]. With the rapid growth of technology and increasing number of mobile phones, there is a rapid explosion of creation of medical applications [4]. Features such as time management, monitoring of patient information, maintenance of records, consultation, references, assistance for taking clinical decisions, education and training related to medical field are present in many apps to help HCPs with a variety of main tasks[2][7]. There are a variety of benefits of using mobile phones and applications to HCPs. The most prominent ones are improved access to point-of-care tools which ensures that there is better support and improved clinical decisions which leads to better outcomes for patients [6]. Some HCPs, however, remain unwilling to utilize them [3]. In order to ensure effective usage and integration of these increasingly complex technologies into medical practice, improved standards and validation methods for mobile medical apps must be implemented, regardless of the benefits they give[9]. These initiatives will raise the barrier to entry into the medical app market, hence increasing the quality and safety of the apps now offered to HCPs [5].

3. EXISTING APPLICATIONS

A. *Teladoc-24/7 access to a doctor:*

Teladoc health is committed to creating a personal healthcare experience. They develop technologies to connect to patients. enhance health decisions and outcomes with data.

Disadvantages: Accessible only in US.

B. *Generis: DNA & Nutrition:*

GENERIS is a health and wellness platform powered by your DNA. It bring together your genes, goals, and lifestyle preferences to help you meet your goals through personalized and actionable plans.

Disadvantage: Not user friendly.

C. *Better Help – Online Counselling:*

It offers counselling through online messaging, live chat, and video and phone sessions. Better Help offers professional counselling from accredited psychologists, clinical social workers, marriage and family therapists, and board-licensed professional counsellors.

Disadvantages: Not cost effective.

D. MDacne – Custom Acne Treatment:

MDacne is the future of acne treatment. In less than 5 minutes you'll get a complete acne treatment kit personalized based on your unique skin.

Disadvantages: Not cost effective.

E. MySugr – Diabetes Tracker Log:

This app logs the user's data and also gathers information about their everyday remedy like diet, quantity of carbs they take in, medications, glucose and insulin levels. Disadvantages: Not available for free.

F. EyeCare Live:

A telemedicine platform that affords patients a way to connect with licensed eye care professionals at home.

Disadvantages: People prefer visiting hospitals for better treatment.

4. PROBLEM DEFINITION

Wastage of medicines that could be of use for patients in critical situations, unable to arrange blood on time, being unaware about medical issues and technologies are some of the problems faced in appropriately treating the patients on time.

5. OBJECTIVE

MEDICAL-DIAL connects blood donors and drug vendors with recipients, without any intermediary such as blood banks and pharma stores, for an efficient and seamless process and also donate medicines to people in need and also keeps people updated about trends and development in medical field.

6. PROPOSED SOLUTION

This utility gives six services namely blood donation, blood seeker, medicine seeker, medicine donation, news and FAQs. This application contains a section for blood donation where the user can fill in details like name, blood group, mobile number and an evidence record is to be uploaded to affirm their blood group. Blood seeking is a section which consists a list of names of the blood donors together with their mobile number, gmail address and blood group. It also provides a drop-down menu to filter the blood group as per consumer requirement.

Medicine donation is sub categorized into three sections: request, uploaded and upload. Under the request section it will list the medicine names that the consumer have requested for. And below the uploaded section it shows the list of medicines that are uploaded by the users along with its name, image, dosage and expiry date of the medicine.

And finally, under the upload section the user is asked to scan the image of the medicine and through image processing technique the name, expiry date and dosage is read by the application. The user has to manually choose the quantity of the medicine that he/she would like to donate from the drop-down list provided. Finally, the user has to check on the check box after agreeing to the terms and conditions. The terms and conditions stated are that the MEDICAL-DIAL application shall not be held accountable: If the services provided are not taken without any advice of a medical professional. If the user faces unforeseeable side effects of during their medication, that may or may not be hazardous. If the user shall provide incorrect medical data either due to medical negligence or any type of malpractice follows. It also highlights a note that states only upon agreeing to the terms and conditions, can a user register their donated medicines. Medicine Seeker consists a list of medicines along with their image, name, quantity and expiry date. The user can scroll through the list and pick the medicine that is needed.

News section provides valuable news in the medical field such as the discovery of a drug or discovery of a virus. This section never fails to keep the person updated in the medical field.

FAQs focuses on the myths and facts. It provides a list of myths and facts helping users to overcome superstitious thoughts and be self-educated.

7. BLOCK DIAGRAM

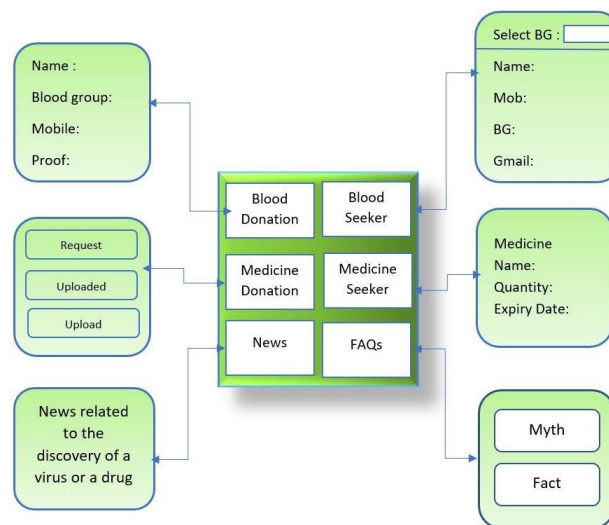


Fig1. Medical-Dial block diagram

8. WORKING

The app's welcome screen, which displays the app logo and a background for 2 seconds before moving on to the next activity. To be eligible to use the app, the user must first register, and then verify his email address before logging in to the app.

After logging into the app, it will first ask for the services they are looking for such as blood donation, blood-seeking, medicine donation, medicine seeking, news, or facts. Users can select the appropriate services based on their needs from the presented home page. On the Home page's Menu tab, users can see and edit their profile. This app service provides the most recent health and life news, which is updated every three hours.

The user can request medicine from the medicine donor and also view the medicine's details. The user can go to home page's Menu tab and go to "Medicine Donation" section to share any leftover or unused medications here. They can upload a photo of it along with the expiry date and dosage strength (mg). Using image processing concepts, we can determine whether or not the medicine is genuine, i.e., whether or not it has an expiry date.

9. RESULTS

The user-interface of MEDICAL-DIAL application is shown below:



Fig2. Welcome page



Fig3. Registration page

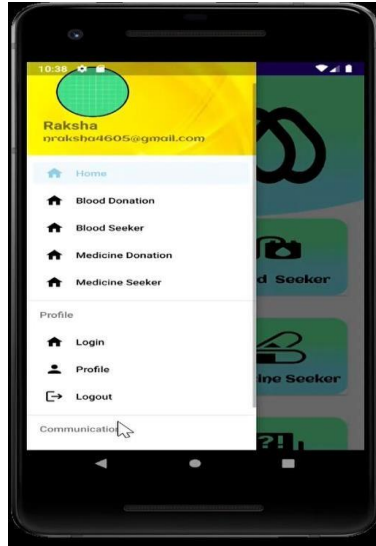


Fig4. Left panel view



Fig5. Section view

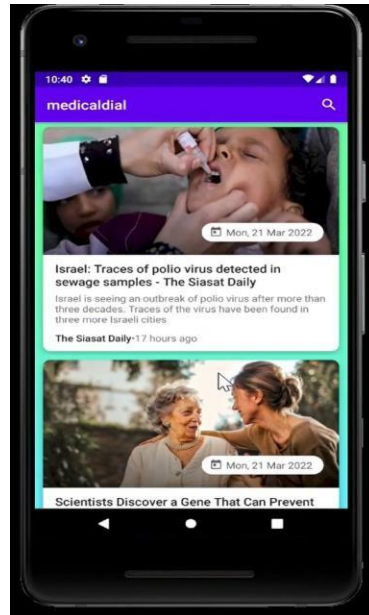


Fig6. News section

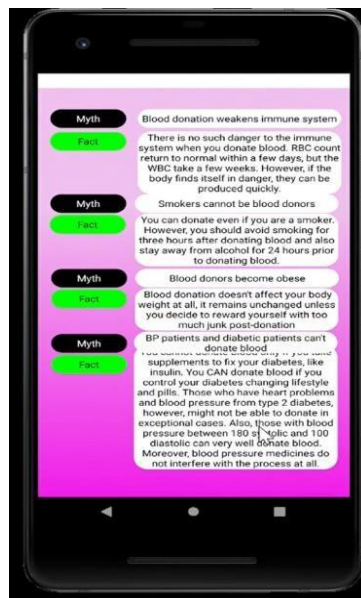


Fig7. Myths and Facts

10. CONCLUSION

MEDICAL-DIAL is an application that is used during an emergency to obtain services such as blood donation, blood seeking, medicine donation, medicine seeking, news, or facts. MEDICAL-DIAL connects blood donors and medicine suppliers with receivers without the need of intermediaries such as blood banks and pharma shops. MEDICAL-DIAL is an attempt to make the procedure of blood and medical crises easier by linking blood donors and medicine suppliers with those who need blood and medicines immediately. MEDICAL-DIAL also gives information such as medical inventions, new technological development, and other medical-related topics.

Some of the advantages of using MEDICAL-DIAL are its easy to use, it's a one-stop solution for all medical emergency situations, there is no involvement of a third party in this process which ensures that medical and blood donation process happens in a hassle-free manner and also provides knowledge about the latest trends and technologies in the medical field. For the purpose of our project, we have developed a prototype module. In future, this project can be taken to the product level. This application is user friendly. Going further, this application can be the first choice for the users to use during medical emergencies

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Biographies