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Research Paper on: Doctor Appointment Booking System

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Abstract: A mobile application called "Health Care Application" is designed to make it easier for people to get medical help by giving them quick, accurate responses. Users of the health care application include doctors, patients, and vendors of medications, pharmaceuticals, and medical supplies. The 'Health Care Application' concept will provide users access to all the amenities whenever and wherever they choose, given the significant increase in the use of smartphones. In today's current, technologically advanced world, it is crucial to find a quick, digital solution to any issue, therefore any emergency needs must be met in an approachable manner. This programme has a symptom analyzer that analyses the symptoms entered by the patient and suggests medications or medical professionals based on those symptoms. Given how difficult it is to remember everything in the modern world, the medication reminder helps users remember their medication dosages without forgetting any. Multiple types of accounts help to maintain data security by limiting user access to only that data for which they are authorised, so data integrity is highly valued. Additionally, this application has a chat room where users can consult doctors, avoid waiting in line at the clinic, pay with their wallets, and, if they choose, take advantage of health insurance services. The patient's health status can be live-monitored by the doctor, who can also review past medical records.

Keywords: UIDAI, Android Application, Aadhar Support authorized person, Medical assistance, SOS.

I. INTRODUCTION

An Android software called "Health Care Application" aids in easing medical circumstances for the user. The user can register and log in using a Facebook or Google account, a mobile number, or any other email address. An insurance agent, doctor, patient, or member of the hospital staff can be the user. It includes separate user interfaces for patients and doctors. With the help of the Symptom Analyzer in this programme, doctors can better comprehend their patients' problems. The user of this application can communicate via chat and also add files, make voice and video calls, and attach files. A user can access the SOS feature in an emergency situation, which includes a nearest ambulance finder. Aadhar verification is connected to systems for filling out hospital forms and, in an emergency, for filing F.I.R.s online. With the SOS feature, the user can also help another person in need while also alerting the responsible ambulance authority. The goal is to ensure patient safety, ensure that all medications and medical equipment are available, locate nearby hospitals, and provide full-time access to doctor consultation, health advice, and first aid information. By delivering medical care as soon as possible, an e-wallet can facilitate cashless transactions while lowering the death rate.

II. REVIEW OF LITERATURE

A. Existing Systems

- 1) *1mg [2]*: Online pharmacy 1mg accepts orders for prescription drugs. Place all medical orders. When a person orders drugs online, they receive a 20% discount. Find substitutes for medicines at this page. Health Information: One can get individualized, practical health advice from knowledgeable doctors to assist lead a healthy life. Medicine Side effects: Be aware of how a medication affects people and any negative effects. Order Lab Tests: Order all necessary medical tests and receive a discount. Free online consultations with the top doctors in India. Online doctor connections are open to all users.
- 2) *Practo [3]*: Book doctor appointment easily: Booking doctor appointments is the easiest on Practo. Consult online with a doctor: Consult a doctor online for medical advice on Practo app. Chat with a doctor instantly in a private consultation. Set medicine reminders: The app will remind the user when to take their medicines. Keep your medical records handy: User can upload their medical records on Practo app to keep them safe, secure and easily accessible from anywhere in the world. Order medicines to your doorstep: User can order medicines online from the app and get quick delivery at their home or office.

- 3) *Lybrate* [4]: Consult a Doctor is Medical platform connecting over 10 million users to over 100,000 top Doctors and pathology labs. Find doctors: In the following Specialties to consult online or to book an appointment.
- 4) *JioHealthHub* [5]: Secure Storage and Sharing: All user health-related files, such as prescriptions, medical bills, lab results, and other documents, are only accessible to them, and they can safely share them with their family and carers members who have access to the info but cannot modify it. Users have strict control over whether their shared information is used for other purposes or is given to a third party without their consent. Anywhere Accessibility: Users' data is saved in the cloud and can be accessed from any location and using any device aslong as they have their secure login credentials. Simple and automated Any health information a user uploads, clicks on, or receives from affiliated healthcare providers or other users is organised into categorised folders.
- 5) *DocsApp* [6]: It is an online Doctor consultation app. Ask your Health or Medical question on app. User can upload health reports and affected areas photos for the Doctor in private chat. Get diagnostic Tests at user's home. User's sample will be collected from home and diagnostic reports will be delivered on the App.

B. Existing Research

In healthcare organisations around the world, information and communication technologies (ICTs) are frequently utilised to identify the specialised hospitals closest to the patient's location. Numerous healthcare applications for Android smartphones have been created to help patients and those who care for them save time and money. A tool that finds the closest hospital with the desired medical specialty within a five-kilometer radius has been developed.[7].

Android-based smart health consulting systems assist patients in scheduling hospital appointments, contacting doctors, and finding doctors who match their symptoms [8].

On Click, Dr. A patient can use an Android application to find the closest hospital and schedule an appointment based on the doctor's availability. In the event that a patient forgets to schedule an appointment, an appointment alert message might also aid [9].

Electronic commerce and e-wallets make it possible to send money quickly and easily over the world. [10]. Study of Google Firebase API for Android uses Firebase to analyse, store, authenticate, and retrieve data [11].

III. OBSERVATION

Comparison between the situation with and without using Health Care Android Application

	Without use of app	With use of app
Contact Doctor	Search for a doctor then get an appointment and then get there through transport and then get consultation.	This application allows the patient to connect to the doctor from any location.
Symptom Analyzing	One may not easily find out the health problem with the symptom the one is going through	With the help of symptom analyzer one can easily find out the health problem
Buy Medicines/ Medical Equipment	One has to go to medical shop to get the medicines or medical equipment.	One can get the medicine or medical equipment with prescription anytime at door step by ordering online.

Blood Donation	A person comes to know about a blood donation camp only when advertised or being passed through the camp.	User can easily find out blood donation camp with simply searching through application
Save our Soul	At the time of emergency it becomes difficult to get reach on time at hospital.	User can easily call an ambulance just by pressing a button.
Monitor Patient Status	The Doctor needs to visit the patient at regular intervals to be updated.	Doctor can monitor the patient's live health status through this application anytime.
Form Filling at Hospital	Long queues, which consumes time that might also been used for looking after patient.	This Application saves time by filling the form online.

IV. SYSTEM FLOW CHART

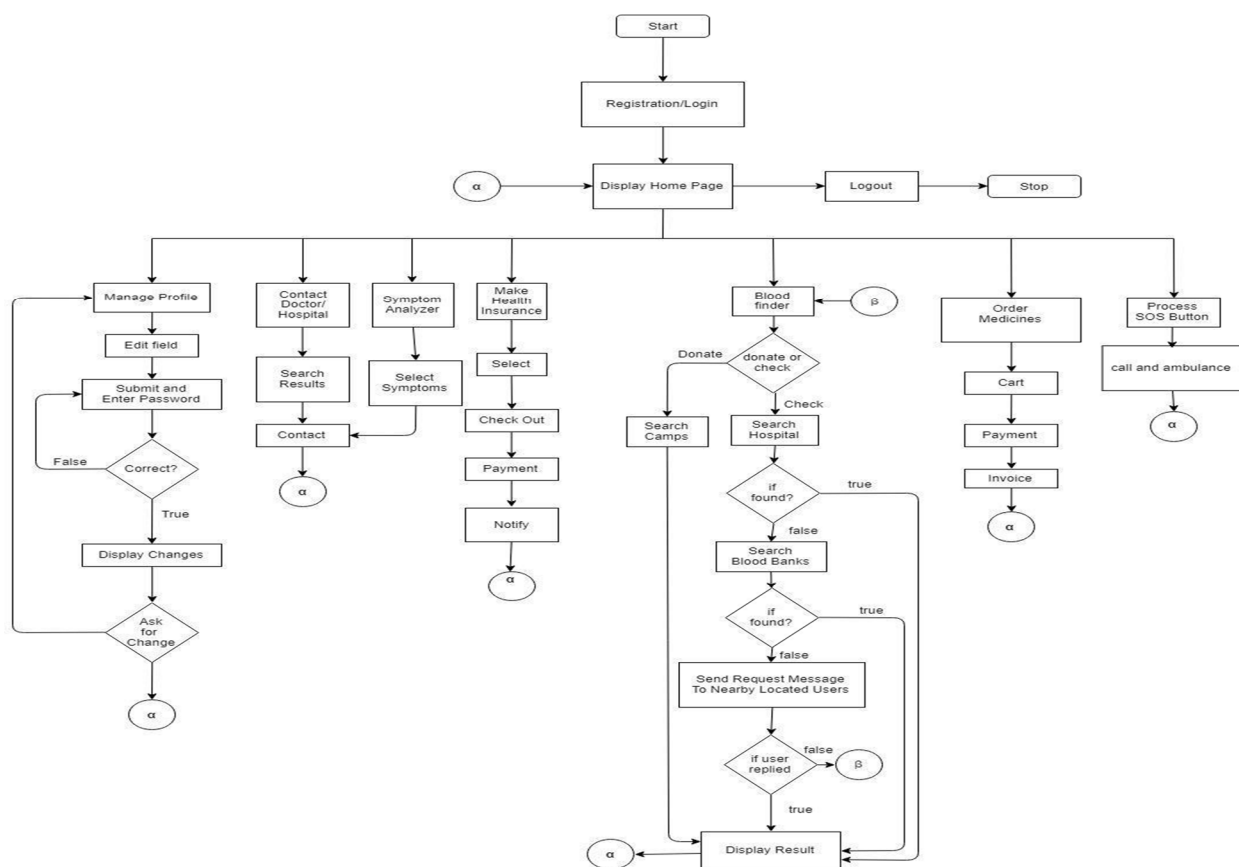


Fig - 1. System Flowchart of 'Health Care Android Application'.

System Flowchart of 'Health Care Android Application' shows how data flows in Health Care Android Application. We can manage profile, Contact and search hospital and doctor, Patient can analyze his/her symptoms of particular disease, One can find blood at hospital and nearby blood banks and if not found then the notification is send to the individual using this application. User can order medicine and can make payment through E-Wallet, User is provided with Save Our Soul (SOS) Button.

V. ADVANTAGE & DISADVANTAGE

A. Advantages

- 1) Consult a Doctor: Consult with doctor online for any kind of medical assistance.
- 2) Symptoms Analyser: It helps to find out the list of possible causes of symptoms.
- 3) Order Medicine: User can order medicine from anywhere, with wide range of medicine and other health products.
- 4) Blood finder provides number of options through which it becomes easy to find the needed blood group
- 5) E-Form Filling at Hospital connects to the electronic form filling of hospital management system.
- 6) E-Wallet: It also provides money security, loaded in the wallet.
- 7) SOS (Save Our Soul): It is an Emergency Button in Health Care Android Application, should be pressed when an accident occurs to call the nearest ambulance at the accident location.
- 8) First Aid Tips & Health Tips : Health Care Application provides first aid articles because it is a life saving, critical help given to an injured or a sick person before medical aid arrives.

B. Disadvantages

- 1) Internet is required for running this application.
- 2) Firebase being flexible, No SQL database needs strict rules for data integrity to be implemented.

VI. CONCLUSION

As a result, we draw a conclusion from our research and discover that health care applications will give us medical aid more quickly. The patient's symptoms are analysed using a symptom analyzer, which enables doctors to treat patients more effectively. As this application offers a chat room service, it adds a feature that allows the patient and doctor to communicate directly. Utilising an Android health care application can make receiving emergency medical care easier. Through this application, it helps the doctor keep track of the patient's condition. The security of the patient and doctor's data is ensured via authentication. Finding a blood donor close to the hospital has gotten easier and more effective.

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