Health Care at Fingertip-An Android App

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Abstract— **Smartphones are now ubiquitous. The most popular operating system these days is Android. There are lots of applications coming up for android based phones. Games, Security, billing apps, etc Apps are available for these phones these days. HEALTH CARE AT FINGERTIP is an android application. This application will contain all the emergency call numbers like Hospital, personal doctor's number, etc. A patient does not need to carry the files i.e. prescription and fee receipt of previously held check-up. This application provides a log-in for doctors and patients as well. The doctor can access the medical diagnoses information of the patient. The patient is registered with a unique ID. So the database of the history of a patient is available with all the doctors registered with the application. A patient can view their medical diagnose by logging onto their accounts when traveling or getting treatment from a new doctor then the doctor can easily get the patient's medical history through this application. A patient can save appointments with Doctor and medicine reminders. As per pre-diagnosed diseases, a list of dos and Don'ts will be attached to the patient's profile. These will relieve the tedious work of handling all the papers and files of hospitals. It will analyze the common disease being found in most patients and the number of people affected. It will provide Medical reports that will be digitized, will be easy to be handled by one.**

I. INTRODUCTION

We here propose a Health Care at Fingertip-an android app, managing system that helps patients to make appointments and look at medical progress and doctors in their work. The system allows doctors to handle their booking slots online. Patients are allowed to reserve empty slots online and those slots are accumulated in their name. The system supervised the appointment data for multiple doctors for various dates and times. The patients' medical entries will be stored in the database of the doctor. The patient can log in and view his/her intact medical history as and when he/she wants. At the same time, a doctor may look at the patient's medical history, even more, the patient visits him. This creates an automated and effective patient-doctor handling system via an online mode. The system also comprises an organ donor platform. This module permits organ donation or organ offering registration furthermore organ search. The module is built to help emergency organ necessity through easy/quick searches. As the name of our app is Health Care at Fingertip, hence it also comprises health care tips, which will help the patient for an instant cure and beneficial for emergency case. The proposed project can be summarized as:

- Search doctors/patients online
- Search / Donate organ
- Donate / Search blood group
- Emergency phone numbers of nearby hospitals
- Health care tips

II. LITERATURE SURVEY

There are many systems developed on hospital management so to take an idea about all process we reviewed various papers on hospital management, various algorithms and various offline android application and websites which are in the market.

A. MFine-Consult Doctors Online

MFine is an android application that connects patients with doctors online. Additionally it allows patients to upload images, past medical records and prescriptions [1].

A. Smart Hospital Management System

This paper outline an RFID (radio frequency identification) technology model for organized system in health care, which can be helped in reducing costs and can facilitate instinctive and smooth patient recognization processes in hospitals [2].

B. Careables.org

Careables.org – An open inclusive approach to health care, this is the platform where care receivers and makers join forces to co-create Careables: tailor-made solutions designed to better suit patients' needs [3].

III. PROBLEM DEFINITION OBJECTIVES AND SCOPES

A. Problem Statement

There are large numbers of commercial system applications to allow a single organization to maintain their data related to a patient visiting their Hospital for treatment. Basic problems with the existing system are the non-interactive environment they provide to users. The use of such a system is only beneficial to a single organization. The existing system does not allow Doctors to find the disease viral and the number of people affected. The existing system doesn't record the details of all users. It is difficult to manage all the files (i.e. reports and prescription).

B. Objectives

- To develop an application, which allows patients to view the medical history/records online.
- To reduce the time required for visiting various doctors at different places.
- To facilitate a user-friendly and time-saving experience for the patient and doctor.
- To provide useful emergency aids.
- To provide Health tips.

C. Scope

The latest information system uses computers for the execution, each of them linked through an optimized network. Healthcare is the censorious aspect in our society, and many health care providers meet the challenges to offer practical and quick services to patients. Many people visit the multispecialty hospital hence managing their records safely is tedious. To reduce this type of burden and for organized financial, hospital administration, and clinical facet, ―HEALTH CARE AT FINGERTIP came into existence.

IV. DETAILED DESIGN

A. System Architecture

The system architecture will simplify the whole system in such a way that every user of the system gets benefits.There are 3 main users Admin, Doctor, and Patient. It's a massive work to manage all the medical reports and the generated prescriptions through that. One can find it hard to maintain the prescription and reports while traveling or shifting to a new place. New doctors need to examine the patient overall again to get the exact detailed medical condition of the patient. Therefore if the data is digitized and available to the Doctor and Patient on the tap of their finger then it becomes easy and fluent to handle such digitized data.

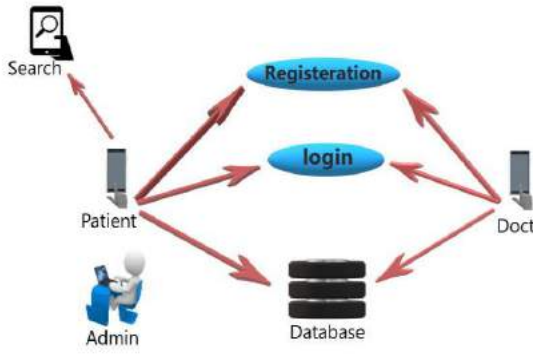


Fig. 1: System Architecture

information. User ID and password are also provided to the Patient for login. The patient selects the functions to view the report or prescription. The doctor is verified by Admin. The doctor also registers and gets provided with a unique user ID and password, which he/she can use for login. The doctor can view the patient's profile, Disease Viral, etc. Apart from these, our system also consists of an organ donor module. This module permits organ donation or organ offering registration and an organ search. The module is built to help emergency organ necessity through easy/quick searches.

Important Modules:

- **Admin Login:** The system is under the supervision of the admin who manages the bookings made.
- **User login/registration:** Users have to first create their account, register themselves to login into the system.
- **Medical History:** The system allows viewing and updating patient medical history.
- **Doctor Search:** The system provides service for doctor search through categories, names, and locations.
- **Appointment availability check:** The user can click on spaces to view the availability.
- **Appointment booking online for date and time:** Users can book an appointment for their required date and time.
- **Booking cancellation:** The user may even cancel their bookings by login into the system anytime.
- **Email on appointment booking:** When the user is successful in appointment confirmation then the 'thank you' email regarding the slot will generate.
- **Feedback:** The system has a feedback form, where users can provide feedback into the system.

- **Organ Search/Donate Portal:** This will allow the user to instantly search for the required organ.
- **Blood Donation and Search Portal:** The patient can search for available blood and one can also register for blood donation.

B. System Framework

1) GPS Tracking System: Our system will use GPS Tracking System to track the current location of the patient so that the patient can access the nearby doctors and hospitals. Smartphones have Data tracking software with GPS capability. This allows the location to be displayed and the available lists of doctors in that area will be displayed on the user's screen with the date and schedule. The patient can choose the doctor and make an appointment.

2) Login and Registration: There will be two logins one for the doctor and another one for the patient. The patient or doctor can register themselves by using the phone number or directly by Google account. The email will be sent to the user for confirmation. If there is already an account then the user can simply login by entering a username and password.

3) Doctor Search: The system will display the availability of doctors as per the scheduled date and time. The patient can fill in the details and can make an appointment.

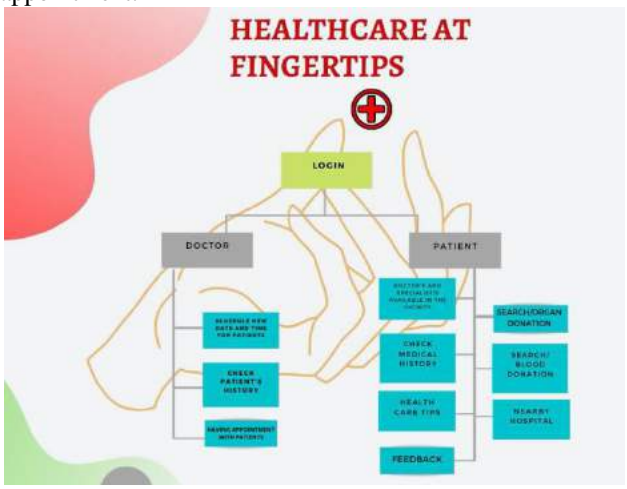


Fig. 2: System Framework Overview

C. System Design Flow

1) Design flow for Doctor:

Fig.3: Design flow for doctor

From the two logins, clicking on the doctor's option one can make an account if he/she is the new user or can directly log in to the system. The new account will be confirmed by the admin and the doctor will get a confirmation email. The doctor can schedule dates and times for the new patients and view and check the registered patients. The doctor can generate reports of the patients and then can generate fee receipts.

2) Design flow for Patient:

A new patient can make an account by entering the required details. The account will be verified by the admin. If the users already have an account, can directly log in to the system. Then the users can reserve their date and time available by the doctors or simply make an appointment. The patients have to enter their details and symptoms. The checkup can be held online through a video call or patients can visit the clinic on the time as per appointment. The payment can be done online.

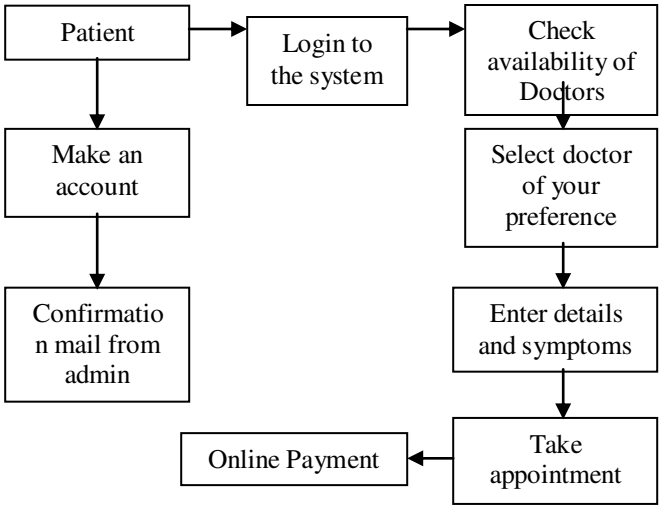
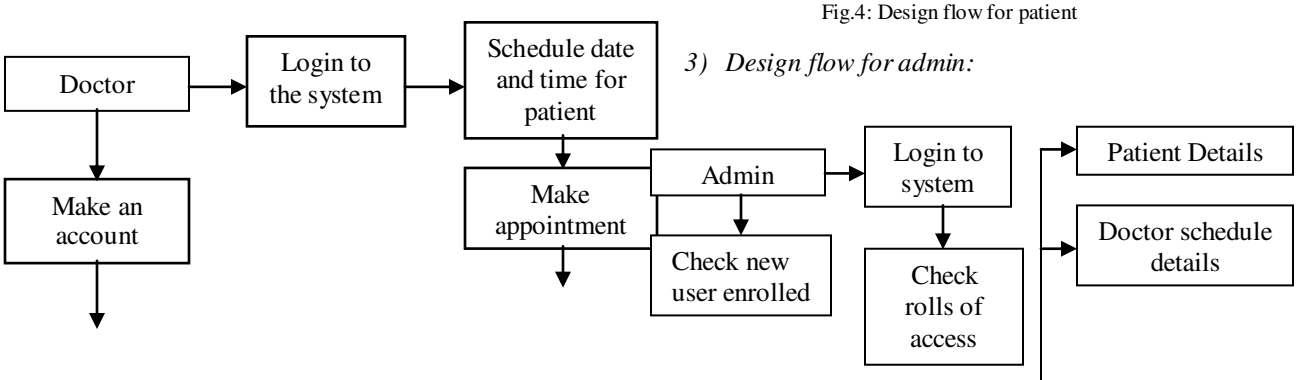


Fig.4: Design flow for patient

3) Design flow for admin:



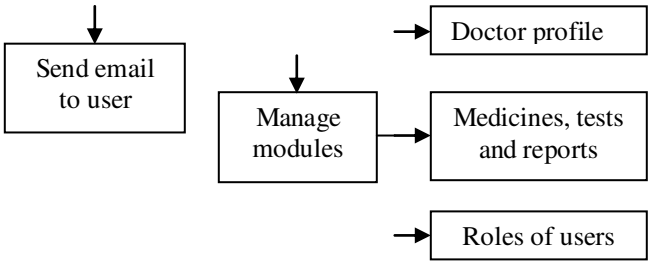


Fig.3: Design flow for admin

The admin manages and maintains all the system work. Admin can accept the new users by checking their details and can send emails to the user. Admin can manage patients' details, doctors' profile, Schedule details, medicines, reports, and tests details. Also, the admin can manage the roles of the users.

V. CONCLUSION

Our system is based on user needs and is user centered. The system will be developed in considering all issues related to all users who are included in this system. A wide range of people can use this if they know how to operate an android smartphone. Various issues related to hospital management will be solved by providing them a fully developed system. Thus we are implementing Health Care at Fingertip an android app to help and solve one of the problems of people.

ACKNOWLEDGMENT

We wish to express our humble gratitude to our Head of the Department of Computer Engineering and our internal project guide Dr. Zainab Pirani for supporting us in all aspects, for encouraging us with her valuable suggestions to make our project a success and helped us understand the project better.

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