

Design and Implementation of Healthy Relationship between Doctor and Patient in Healthcare Management System

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ABSTRACT

Now with the growing social pressure and their personal life stress adds most people with health problems. It is more important to design a health security system for people. As mobile phones play more and more important role for people, it is the best choice that the system will be deployed on mobile phones. Through the connection between mobile terminals and specific service, both physicians and patients are able to obtain required data to achieve a better interaction. The advantages of mobile web can be made full use of to make up the time and distance gap between doctors and patients and to provide fast and adequate medical services. The proposed app is used to check the availability of Doctors and to fix the appointment based on their availability. This app is helpful to patient to place their concerns directly to the doctor regarding their health conditions. The system is aimed to help doctors to enter as well as view patient history as well as other patient details. Our system is a standalone system that can be installed on doctor android phone to be used for further login. On installation the application allows a doctor to open application and enter the details of any patient that undertakes his service. This app will facilitate messaging service, sending prescription to pharmacies, confirming appointments, information sharing with other doctors and patient referrals. Hence cost and time of the customer service is efficiently managed.

INTRODUCTION

Being busy is synonymous to the present society. Life is becoming too busy to get medical appointments in person and to maintain a proper health care. Sudden travels can totally change the medicine course for people due to time zone changes and also people with serious medical ailments find it difficult to cope up with such travels and work and their health. Diabetes and high blood pressure patients have a necessity to take proper medicines at proper time. But the present busy schedule of people makes it difficult for them to follow such timely medications. This is a problem that is prevailing all over the world where workaholics and travellers find it difficult to maintain both their health and work. Technology has provides us with many choices and our paper proposes one such innovation using the android platform for a healthier lifestyle.

The category of patients involves all human beings-teachers, students, businessmen, housewives, children and also all of us have a busy hectic schedule. Today's life is full of responsibilities and stress. So people are prone to diseases of different types and it is our duty to make ourselves stay fit and healthy. If the patient stays at home then he or she might get someone to look after him/her but when one is not at home, is out of the city or state away from home then it is hard for the family members to call them and remind them their dosage timings every time. In our developing and technology dependent life we totally rely on gadgets especially smart phones. Today everyone has a smart phone. With this we get an opportunity to use technology in a better way so that it can be made useful to us. And it plays an important part in our daily life and helps us staying fit in many ways.

LITERATURE SURVEY

Many Medication Systems have been developed based upon different platforms and concepts. Use of healthcare related apps is growing but there are many issues related to their functionality.

The mobile services and applications worth chain has well-versed several changes throughout the past few years (1990-2012) because of the evolution of mobile devices and their capabilities. Chohick in 2011, a platform is “a product which will be extended by a user for the advantage of different users”, and this statement will be verified by that the iPhone or golem as a platform compete an elementary role within the shift of developers attention to the present new chance, yet as shopper education and awareness of the advantages of applications to make sure a viable system. As additional and additional community are transferred to mobile technologies, well, in truth, the quantity of individuals owning a Smartphone or a pill and different new devices has skyrocketed over the previous couple of years, each economic facet is moon-faced with a replacement perspective in approaching customers. Within the context of package progress, many voluminous mobile house owners and social media, insurance firms and their various ecosystems cannot afford to be unbroken out of the digital loop. From ancient and long approaches towards a replacement era of, bit and solve”, let’s define the most advantages that insurance industries got to gain from adopting mobile applications and the way your insurance app ought to look like: superior consumer base by branching resolute multiple mobile platforms (Android, iPhone, tablets, etc.) and canopy a bigger objective demographic advocate product data.

Many evidence-based software apps serve as useful bedside clinical decision-making tools[8]. Printed medical

references often used in disease diagnosis are now available as mobile device apps that provide information on diagnosis, treatment, differential diagnosis, infectious diseases, pathogens, and other topics. Such apps include: Johns Hopkins Antibiotic Guide (JHABx), Dynamed, UpToDate, 5-Minute Clinical Consult (5MCC), 5-Minute Infectious Diseases Consult (5MIDC), Sanford Guide to Antimicrobial Therapy (SG), ePocrates ID, Infectious Disease Notes (ID Notes), Pocket Medicine Infectious Diseases (PMID), and IDdx.

SYSTEM SPECIFICATION

3.1. HEALTH CARE MANAGEMENT SYSTEM

3.1.1 METHODOLOGY

3.1.1.1 User Specifications

The user logs in through his cellphone and gets the details of the various medical departments and the doctors corresponding to that department. The user can click on the required doctor’s name to access the details of that doctor present in the mobile internal database. The user can then call or sms or email the doctor as per his/her comfort to contact the doctor in a fast & reliable way. The user can also view the doctor’s photo (if available) in the server through his mobile phone.

Login Description: The user will login into the application from his/her mobile phone. If the user don’t have adobe flex installed in his/her mobile phone, user will be prompted to install the same from google play else error message will be displayed.

Welcome Screen Description: After login, the user can view the welcome screen showing hospital doctor plus logo which is quite professional to the application.

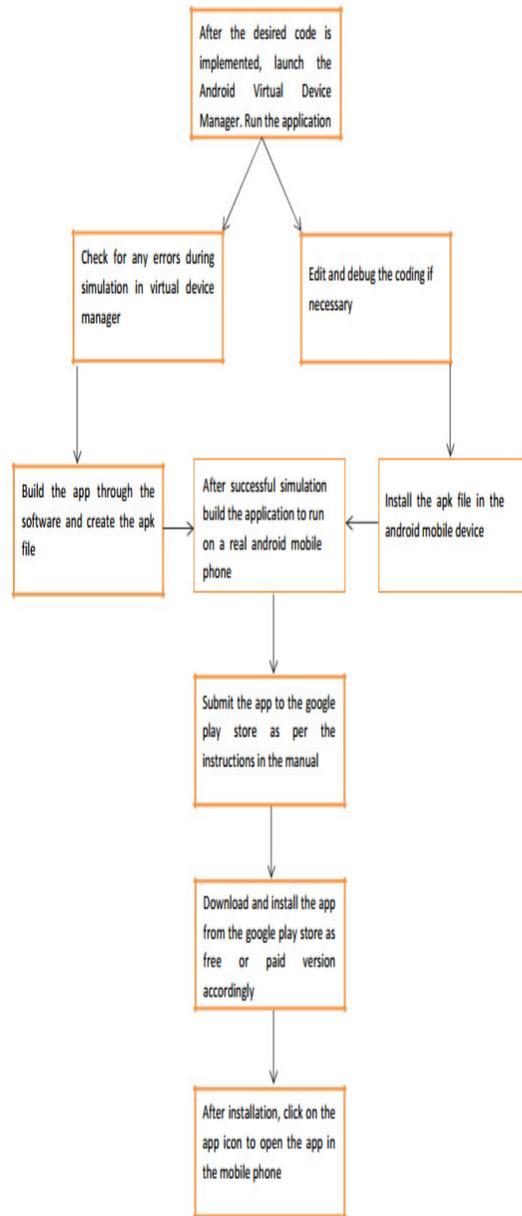
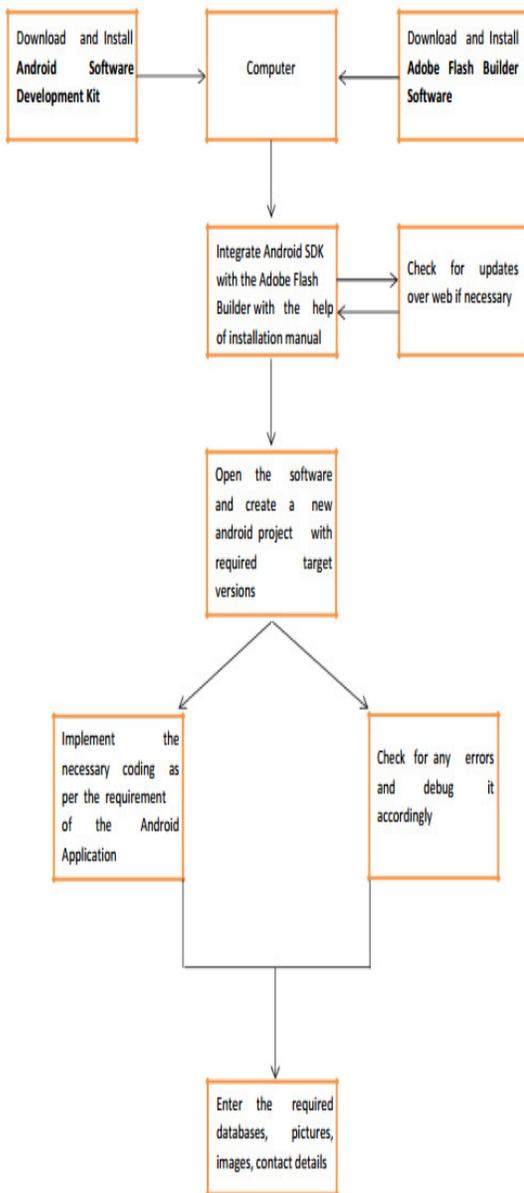
Selection of Hospital Departments

Description: The user can view the list of departments available in the hospital. Input: Select a department and click on get

doctor's list. Output: List of doctors under that department.

Select among the list of available doctors **Description:** User chooses the desired doctor. Input: Click on the specific doctor's name Output: Contact details of that doctor is shown

Connectivity **Description:** After getting the details of the doctor he/she can contact the doctor through any of the details available. Input: Select cell phone or email or sms Output: Activity (dial, mail, sms) executed as per selection



3.2 . SOFTWARE REQUIREMENTS

- 🌱 Microsoft® Windows® 8/7/Vista (32- or 64-bit)
- 🌱 At least 1 GB for Android SDK, emulator system images, and caches
- 🌱 Java Development Kit (JDK) 7
- 🌱 Eclipse

🌱 ADT (Android Developer Tool)

3.2.1 What is Android?

Android is a Linux-based operating system developed for smart phones or tablet computers. It is a stack of software that includes operating system, middleware and libraries and APIs written in C [10]. It was developed by Google and Open Handset Alliance in July, 2005. Android is an open source and Google releases the source code under Apache license. This open source and free license allow the manufacturers and the enthusiastic developers to freely develop and modify their applications in Java-like language that utilizes Google-developed Java libraries [2].

3.2.2 Features of Android : **Application Framework**

Android application framework is supported by number of open source libraries like Open SSL, SQLite, and Libc. The application framework is also supported by the Android core libraries. The framework is based on UNIX file system permissions which ensures security as the applications can have only those abilities that mobile phone owner give at the time of installation. The application framework enables the reuse and replacement of components.

Dalvik Virtual Machine (DVM)

Dalvik is a process virtual machine used in Google's Android operating system. It is a low memory based virtual machine which is especially designed for Android to run on the embedded systems and work efficiently in low power. The programs are commonly written in Java and are compiled into byte code [2]. This byte code is then converted from JVM .class files to .dex file (Dalvik executable) before installation on a device.

SQLite

Android OS contains the SQLite database management classes which are used by an application to maintain its own private database. SQLite is a relational database management system contained in C programming library [10]. It is mostly preferred as embedded database for local or client storage in application software. It has many bindings to the programming languages.

Linux Kernel

Android uses Linux version 2.6 for the core system services like memory management, process management, security and network stack. The Linux kernel also acts as an abstraction layer between the hardware and the software stack

PROPOSED SYSTEM

4.1. MOTIVATION

The connectivity to doctors through mobile devices is one of the most important systems needed by every individual to contact the doctors at the time of need. The previous conventions followed for contacting doctors was very tedious task and require a lot of time. It was not automated and so handling and maintaining was a tough job [8]. The previous connectivity system uses large databases in the form of hardcopies; directory etc. needed to get the information about a doctor and thereafter contact him. But it was quite time taking & was not reliable. So there was a need to automate the connectivity system and to reduce the manual effort needed in storing the records and maintaining it. The doctor's directory system through mobile devices is fully reliable, fast and is easy to use [4, 5]. Nowadays, Android phone has emerged as the world's most popular mobile platform. Android is the world's most popular mobile platform. It's the largest installed base of any mobile platform and growing fast. Millions of users are using android phones and android application is becoming more and more popular.

4.2 OBJECTIVE:

Design a Doctors Directory system to keep contact details of doctors in mobile devices for easy and faster connectivity at the time of health issues.

1. Develop and implement a Doctors Directory system.
2. To create an Android mobile application to provide a User Interface to interact with the system.

4.3 PROPOSED SYSTEM

All the existing applications are kind of more commercial and money making, and hence there is a need of an app that cares more for patient and to provide an optimal communication between doctors and patients. And hence in our proposed system of doctor Patient Communication System, an Android app sets up online communication between a doctor and a patient economically. This app is helpful to patients to ask questions and state their concerns to doctors regarding their health condition. This app will facilitate the patients to interact with doctors without making any physical appointments, but the patients are restricted to only one message per day before receiving a reply.

Advantages

- The system can be used anytime and from anywhere by the doctor.
- It excludes the use of paper entries/registers.
- Doctors can view patient whenever needed in their application.
- Saves time and reduces human intervention.
- The system is flexible and secured to be used.

4.4 MODULE DESCRIPTION

The coding phase deals with transforming the user requirements as described in SRS document, into a form i.e. implementable using programming language. The programming language used to develop is JAVA and XML. For this design to be easily implantable in a convenient programming language, the

following items were design during the coding phase. Different models were required to implement the entire design solution. The modules constituted of units such as welcome module, selection module, view module & activity module. The innovation relationship among different modules. This includes which modules call other modules. The interface among different module identifies the exact data items exchanged among the modules.

- **Doctors Registration**
- **Doctors Login**
- **Patients Registration**
- **Patients Login**
- **View Doctors Availability**
- **Fix Appointments**
- **View Patients History**

CONCLUSION

The Design and Implementation of Healthy Relationship between Doctor and Patient in Healthcare Management System through mobile devices is a very effective tool which can be used to a great extent. The system is portable and can be easily installed and used on any mobile phones supporting Android OS. The use of this system can result in a reduction of number of hours spent in searching for doctors and contacting them at the time of need. It also provides an interface which is easy to understand by the users and greatly helps in adapting to the use of this system.

FUTURE WORK

The application can be further enhanced and several other functionalities can be added. The application can be made for other platforms like windows, apple, and blackberry. The present system is only applicable to android devices. We can enhance the application by creating directory of doctors at country, state or district level. The feature to update the details of the doctors at a later stage can also be implemented. The system can also be enhanced by using voice recognition feature of the Android.