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E-Health Care System for Improving Physician Patient Relationship

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***Abstract*— There are no apps which actually meet the patient's basic needs and no such apps that fulfill the patient's expectations from the doctors. The Doctor has publicized themselves as the best service providers but all the service is just limited to money making by Doctor got an option to create patients and their details to store into the application. In the current marketplace there are several apps for communication between doctors and patients but most of their functionalities are commercial, and not really helpful to the users. Application also provide an emergency button so that it when patient is in panic mode, they can press that emergency button and details of their location would be sent to set relatives and doctor.**

***Keywords*— Communication, Location.**

I. INTRODUCTION

In the current marketplace there are several apps for communication between doctors and patients but most of their functionalities are commercial, and not really helpful to the users. There are no apps which actually meet the patient's basic needs and no such apps that fulfill the patient's expectations from the doctors. Though these apps have publicized themselves as the best service providers but all the service is just limited to money making by Doctor got an option to create patients and their details to store into the application. Doctor can select the patient to send their respective prescription and it would be notified to them using Google Cloud Messaging. Patient can view their prescription in the application received from Doctor through Google Cloud Messaging. History of patient prescription is also maintained in the application. Application also provide an emergency button so that it when patient is in panic mode, they can press that emergency button and details of their location would be sent to set relatives and doctor.

II. LITERATURE SURVEY

First paper we have referred for literature survey we referred "**Designing Interactive Health Care Systems: Bridging the Gap Between Patients and Health Care Professionals**" (Lisa graham, Mohammad moshirpour, Behrouz H. Far, Michael smith) in this paper patients become more positive about their health and roll to technologies such as the Internet to gain knowledge, the patient-health care expert relationship has been changing. Usually, information has flow from health care expert to patient, but change is two-way discussion is taking place. In this study, we examine a high level design of a professed medical system and determine the implications of adding patients as active contributors. The main challenge of modify existing systems to incorporate patient interaction is preserve system integrity. We propose a systematic approach to support scaling health care systems while preserving system integrity [1].

After that we studied second paper **"Android Application for Doctor's Appointment" (**Chaitanya kusurkar, S. B. Choudhari, parag mahajan, ruche sonje**)** In today's living world if somebody needs to reserve a Doctor's Appointment then we need to call in hospital or face-to-face go that place and reserve the appointment. This consumes valuable time of patient. Also if the doctor cancels his/her schedule, the patient does not know about it except he/she goes to the clinic. The goal of this project is to build a health care system that will relieve the process of book appointment of the doctor. The patient will book the appointment through his/her smart phone. The doctor will know the number of patients and he has to attend whole day. This system will save patients plus doctor's time. It saves the receptionist's document work. This system will prove that it helpful for doctor he can check his appointments whenever and from wherever he wants from his mobile phone [2].

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In third paper we studied **"Android Based Health Care Monitoring System" (**Maradugu Anil Kumar, Y.Ravi Sekhar **)** In general in vital case patients are need to be observe constantly for their SP02, Heart Rate with temperature. In previous method, the doctors need to be there physically or in quite a few cases SMS will be sending by means of GSM. In the former case the history of the patient cannot displayed, only recent data is display. In the recent paper, we use a fresh idea for constant monitoring patient's health conditions. The health care scheme is focus on the amount and monitors diverse biological parameter of patient's body similar to heart rate, oxygen dispersion level in blood and temperature using a web server and android application, where doctor can constantly monitor the patient's situation on his smart phone using an Android application. And also the patient history will be stored on the web server and doctor can access the information whenever he needed from wherever and it does not need to physically present [3].

After all of this in last paper we studied **"PM'DROID: Patient Monitoring on Android"** Today, if we judge against the diversified population and number of disease are there, we find that, the tally of diseases in excess of today's population, so death-ratio is increasing. To avoid this, day to day treatment is essential. This paper explore machine that gives special care for patient, providing instant message in case of emergency. To point out emergency treatment, ULN device is used. It reduces human hard work. This system focuses on physiological crucial parameter such as temperature and heart rate. Sensors which are used for the patient sends data to android mobile through Bluetooth and also updates database on computer [4].

III. Algorithimic Stratagies

RSA algorithm is used for encryption and decryption of messages. It is an asymmetric cryptographic algorithm. Asymmetric means a two different keys. This is also named public key cryptography, The other key must be kept private. It is built on the detail that finding the factors of an integer is tough (the factoring problem). RSA stands for Ron Rivest, Adi Shamir and Leonard Adleman, they first openly defined it in 1978.

A user of RSA creates and then publishes the product of two large prime numbers, along with an auxiliary value, as their public key. Anyone can use the public key to encrypt a message, but with now available methods, if the public key is huge sufficient. We used this algorithm for storing patient's information in encrypted format in database.

1) Working

1. Select two very large random prime integers: a and b
2. Calculate n and φ(n): n = ab and φ(n) = (a-1)(b-1)
3. Select an integer e, 1 < e < φ(n) such that: gcd(e, φ(n)) = 1 (where gcd means greatest common denominator)
4. Compute d, 1 < d < φ(n) such that: ed ≡ 1 (mod φ(n))

Where…

- the public key is (n, e) and the private key is (n, d)
- the values of a, b and φ(n) are private
- e is the public or encryption exponent
- d is the private or decryption exponent

2) Encryption

The cyphertext C is found by the equation 'C = Me mod n' where M is the original message.

3) Decryption

The message M can be found form the cyphertext C by the equation 'M = Cd mod n'.

IV. Proposed System

In proposed system, Doctor can create patients and their details to store into the application. Doctor can select the patient to send their respective prescription. It would be notified to them using Google Cloud Messaging. Patient can view their prescription in the application received from Doctor through Google Cloud Messaging. History of patient prescription is also maintained in the application. Application also provide an emergency button so that it when patient is in panic mode, they can press that emergency button and details of their location would be sent to set relatives and doctor. In this, Doctor will also set a timing for each drug to inform their patient and ring an Alarm at its respective time of drug.

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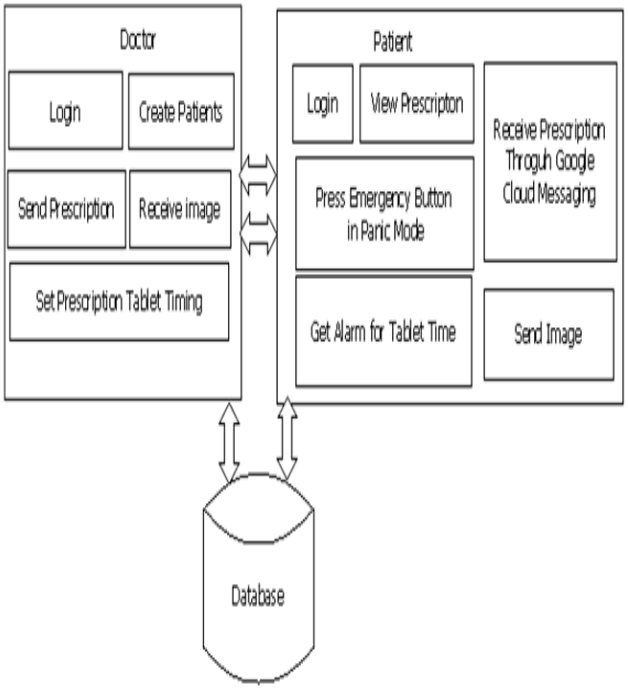

Figure 3.1: System Architecture

A. *Doctor Module*

In this module doctor firstly login through smartphone and then he will create a patient then send its username and password through mail profile. Unlike a traditional system doctor give prescription using paper and pen but in this system doctor give prescription using this app. Doctor as well set prescription timing for each medicine so it will help patient to understand when he need to take medicine. All of these doctor as well as patient information is store in database in encrypted format

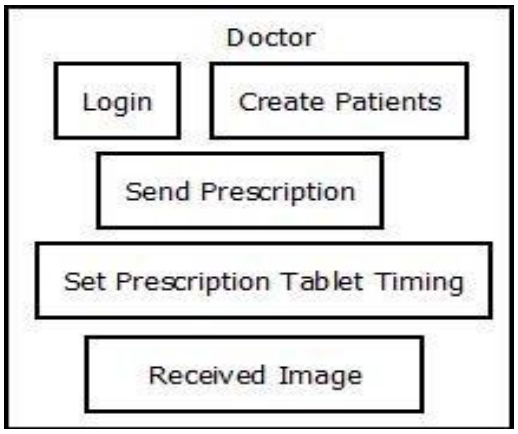

Figure 3.2: Doctor Module

B. *Patient Module*

In this module patient login through user and password which he received from E-mail. Once patients log in to system then he will able to view prescription. During in any emergency patient press panic button and then message go its folks and doctor. If patient is far away from the doctor and he suddenly injured then patient will able to send his injuries photo to doctor and then doctor will give him a prescription of first aid. Patient is able to set alarms for medicine which help him to take medicine. Also patient will receive pop-up notification like appointment cancellation through Google cloud messaging

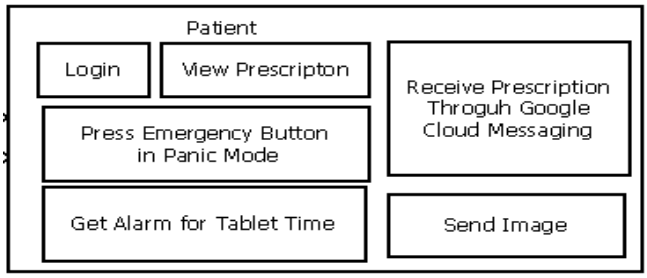

Figure 3.3: Patient Module

V. CONCLUSION

This application improves the doctor and patient interaction through efficient handling of this application. The tablet timing is well managed through the alert.

REFERENCES

[1] Lisa Graham, Mohammad Moshirpour, Michael Smith, Behrouz H. Far. "Designing Interactive Health Care Systems: Bridging the Gap Between." 978-1-4799-2131-7/14/$31.00 ©2014 IEEE (2014): 235-239.

[2] Prof. S. B. Choudhari1, Chaitanya Kusurkar2, Rucha Sonje3, Parag Mahajan4, Joanna Vaz 5. "Android Application for Doctor‟s Appointment." International Journal of Innovative Research in Computer (2014): 2472-2474.

[3] Maradugu Anil Kumar, Y.Ravi Sekhar. "Android Based Health Care Monitoring System." IEEE Sponsored 2nd International Conference on Innovations in Information,Embedded and Communication systems (ICIIECS)2015 (2015): 1-6.

[4] P.Railkar, Nishigandha Bodake,Priyanka Kodgirwar,Neha Deshmukh,Komal Chirame. "PM'DROID: Patient Monitoring on Android." International Journal of Computer Applications (0975 – 8887) (2015): 34-38.

[5] Mayuri Navale, Sandhya Damare, Rameshwari Chavan,Renuka Dube4, Prof. Suhas Patil. "Android Based Heart Monitoring and." International Journal of Advanced Research in Computer and Communication Engineering (2014): 6544-6546.

[6] Bahae Samhan, Majid Dadgar,K.D.Joshi. "Mobile Health Information Technology and Patient Care:." Transactions of the International Conference on Health Information Technology Advancement 2013 (2013): 18-29.