DIGITAL MEDICINE: AN ANDROID BASED APPLICATION FOR HEALTH CARE SYSTEM

Dr. S.D.Shanthi

Assistant professor of Economics, S.T.Hindu College, Nagercoil, Kanyakumari District. (Affiliated by Manonmaniam Sundaranar University, Tirunelveli).

Abstract
A hectic lifestyles to cope with fast pace more and more people are facing health problems irrespective of the age group. Healthcare system has thus become an inevitable part of every family. Getting efficient and quick healthcare becomes a necessity; therefore along with the generic approach there comes a need to adopt a parallel efficient and speedy approach known as Digital Medicine. It is an approach which can be adopted by hospitals to provide quick access to healthcare services provided by them. Such as online video conferencing, emergency alarm with critical form of medical condition or accidents; uploading of medical reports with security measures necessary while consultation, online medical prescription, scheduling appointment, information about nearest hospital and medicos, life remainder system to remind medicine intake timely. It is designed with an aim to facilitate faster and efficient communication between doctors and patients giving transparency to locations or distance where they are based while using the application. The proposed application is deployed on android based mobile phones connecting to the server managed by hospitals and uses GPS and GSM network for communication.

Keywords: GSM,GPS,Digital Medicine,Healthcare System,Video Conferencing, Report Transfer.

1. Introduction
The important intension of introducing the gadget is to reap vicinity transparency for sufferers and doctors in the present conventional health care device. At the equal time it facilitates to lessen the manual paper paintings on the healthcare counters. As we deal with sensitive domain, there has been also a want to address the records in a secured way subsequently one of a kind ranges of security features were followed. User pleasant interface and brief statistics processing and transmission had been also the demand of utility.

1.1 Existing System
In the present fitness care device, the number one requirement and downside is physical presence of patient and doctor for each session. Also there's a excessive danger of misinterpretation of facts as well as incidence of mistakes. Moreover, it's miles bulky and time consuming. With the growth in quantity of sufferers in the fitness care institutes, conventional technique of management has long past out of phase. As a result of this, an advanced Health Care Management System has been the demand of time.

Disadvantages of Existing System
- No location transparency for patients and doctors.
- Unable to forward urgent notification or emergency alarm to doctors or hospitals.
- Unable to get exact location of accident.
- Unable to get information on nearest hospital and clinic.
- Unable to notify in urgency to hospital and clinic.
- Unable to get online medical prescription.

- Unable to get immediate services such as scheduling an appointment, booking an ambulance etc.
- Time consuming and high volume of paper work.

1.2 Proposed System

Our system consists of two parts: the client and the server. The client is deployed on an android-based cell phone (android 2.2 onwards). There are two parts:

- The emergency alarm.
- Healthcare management system.
  Both the two are android applications. The server is deployed on a computer, which may be located in a hospital, and be operated by a doctor. It also contains two subsystems:
- The emergency alarm
- The healthcare management system

With the assist of the GPS and GSM community, the device can make sure the area of the users while they're in scientific hassle. It triggers the emergency alarm and may also show all nearest hospitals to user. When the physician or own family receives the alarm message, they could immediately take scientific measures to rescue the consumer. The gadget is the use of GPS and GSM technology for conversation. The Global Positioning System (GPS) is a space-based global navigation satellite TV for pc gadget (GNSS) that offers vicinity and time statistics in all weather, anywhere on or close to the Earth. GSM (Global System for Mobile Communications, at first Group Special Mobile), Messages are sent to a Short message service centre (SMSC) which gives a "shop and ahead" mechanism.

Other health services supported through the system are supplying on line medical prescription, viewing the nearest hospitals and docs or diagnostic centres, scheduling an appointment, and reserving ambulance. These offerings are provided using GPS and GSM communication network. Advantages of Proposed System.

- Video conference call between patient-doctor and doctor-doctor.
- Emergency alarm on critical medical conditions or accidents.
- Online medical prescription
- Secured medical report transfer from patient to doctor or doctor to doctor
- Availing health service facilities such as scheduling an appointment and booking an ambulance
- Finding the nearest hospitals and medicals
- Low cost and time saving system
- Different levels of security measures in each module.

2. Implementation

2.1 Video Conference Call

For follow up consultancy the patient can use this module to consult with the doctor. The same module can be used for doctor to doctor medical information and history exchange about a patient in loop. Video conferencing is provided by the open source application.

2.2 Emergency Alarm

Emergency alarm machine can be triggered on important scientific situation together with cardiac arrest or an accident. The alarm movement will send emergency messages and calls to the user's own family and the medical doctors. The emergency message can consist of the place facts, in order for the rescue body of workers to locate the consumer.

2.3 View nearest Hospital

With the help of the GPS and GSM network, the machine can song the location of the consumer and thereby display facts approximately all nearest hospitals to user by way of clicking on a particular clinic all statistics approximately that medical institutionmight be furnished to the person..

2.4 Medical Report Transfer

Patients can add their numerous scientific reviews at some point of consultancy with docs. Also docs can analyse the ones reviews during the observe up with the affected person. These scientific reviews can be transferred from one device to other in encrypted form. For the encryption of the medical reviews AES algorithm is used as a way to shield the confidentiality of the consumer and simplest the legal individual can get entry to it. The records of such uploaded scientific reviews may be viewed by using the health practitioner for in addition remedy.

2.5 Online Medical Prescription

After the comply with up consultancy via video conferencing doctor can send the net prescription to the consumer in order to offer the records approximately the drug treatments, the frequency and the time of intake.

Conclusion

We have evolved a healthcare App which could be very consumer friendly and green in communique and reporting. The software evolved has met all the objectives that were delineated because the blessings of the proposed gadget. By deploying the software on cellular phones we had been capable of carry the healthcare App on the palm of every individual. The software can be deployed at the cloud through integrating specific hospitals and linking their servers via the cloud. Though sufficient security features had been followed still there might be a scope to increase the security parameters. With appreciate to the comments of the App users similarly improvements can be included in the gadget to make it greater users pleasant.

References

1. International Journal of Computer Applications (0975–8887) Volume 118–No. 9,   May 2015.
2. Akash Borate, KetanBhapkar, Darpan Sharma. "Android Based Fuzzy Inference System to Controlthe Fan Speed". Journal of Harmonized Research in Engineering 2(1),pg 69-74, 2014.
3. Amit M. Farkade, Sneha R. Kaware. "The AndroidA Widely Growing Mobile Operating System With its Mobile based Applications". International Journal of Computer Science and Mobile Applications", Vol.3 Issue. 1, pg. 39-45, January 2015.
4. Moncrieff s., venkatesh s. west G.,A Framework for the design of privacy   preserving pervasive healthcare, multimedia and expo, 2009. ICME 2009.
5. P. Pace, G. Aloi, and A. Palmacci, DzA Multi-chnology Location- Aware Wireless System for Interactive Fruition of Multimedia Contents,dz IEEE Transactions on Consumer Electronics, vol. 55, No. 2, pp. 342-250, MAY 2009.
6. P. Bellavista, A. Kupper, and S. Helal, DzLocationbased services: back to the Future,dz IEEE Pervasive Computing, vol. 7, issue 2, pp. 85-89, April-June 2008.
7. S. Hartwig, M. Luck, J. Aaltonen, R. Serafat, and W. Theimer, DzMobile multimedia – challenges and opportunities,dz IEEE Transactions on Consumer Electronics, vol. 46, no. 4, pp. 1167-1178, November 2000.
8. D.L. Lee, W.-C. Lee, J. Xu, and B. Zheng, DzData Management in location- dependent information services,dz IEEE Pervasive Computing, vol. 1, no. 3, pp. 65-72, July-Sept. 2002.