E-Nursing System

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Abstract - *In this paper, we propose an Android-based application where the registered user can simply tap the help button on the android phone and call the nearest ambulance for help. It will also notify the favorite contacts that are added while registering. The hospital will also get notified that the ambulance is arriving and make the preparations as per the need.*

Key Words: *Android Smartphone, Emergency alarm message, Emergency Medical Service, Location Tracking, Etc*

1. INTRODUCTION

Android is an open, security-focused mobile platform that is programmed with java. Android comes with OS features like multiple language support, efficient shared memory, preemptive multitasking, connectivity technologies, UNIX user identifiers and file permissions with its familiar class library. This project is typically based on the Android application where the patient can call the ambulance by just one click in an emergency situation. Also, the easiest and the shortest route can be found with the help of the app. The system finds the nearest available hospital, contacts its ambulance emergency system, accesses an Electronic Health Record of an emergency patient that can critically assist in pre-hospital treatments.

2. OBJECTIVE OF PROJECT

- To get the nearest Ambulance and track the shortest path for the hospital.
- One-tap help service.
- Hospital management.
- Easy access to emergency situations
- Automatic emergency alarm and message system

3. PROBLEM DEFINITION

- The idea is to make an app which will work as a one-tap help application.
- The Android application gives the opportunity to share location information with the users through SMS
- If you are in an emergency situation you can call the nearest ambulance.
- Latitude and longitude can be used to track the nearest location of the ambulance.

4. LITERATURE SURVEY

Elerts apps:-

- Need to respond and ask for help.
- Emergency should be seen and reported by the 1st responder, it not automatic.

HelpMe:-

It may not be appropriate for a personal emergency where needy stay alone or in the situation like old age citizen or person with unconscious minds.

- Heavily depends on the ad-hoc network created nearby.

Great Call:-

- An emergency is not detected automatically
- Emergency should be reported by a person who is in the emergency.

5. MOTIVATIONS

Emergency never comes with prior intimation and in real-world scenarios. Detecting such emergencies & reporting them is a tangible challenge. Disaster management organizations, may its government or the private one, have their own agenda in place to work-out on the plan and rescue the person who is in the emergency. But many of such rescue teams/organizations complaints as they won't get the right information in right time. That is disaster management teams will not able to get the right information of the emergency in right time, so more the delay in reaching information of emergency to rescue team leads less chances of rescue. Countries like US, where most of the old age citizens stay alone; separate from their children. Medical emergency is most important factor for such citizens. Even considering other personal emergencies like fire at home due to some unfortunate conditions and being alone, sleeping at home leads to major injuries; sometimes death. As per the Indian government ministry of road transport and highway department report during the calendar year 2010, there were 5 lakh road accidents in India, which resulted in more than 1.3 lakh deaths and inflicted injuries to 5.2 lakh persons. These numbers translate into one road accident every minute, and one road accident death every 4 minutes. Unfortunately more than half the victims are in the economically active age group of 25-65 years. The loss of the main breadwinner can be catastrophic. (Source: Government of India, Ministry of road transport and highways, transport research wing, New Delhi) In all such situations person who

is in emergency will not be in position to inform disaster management team, and that is the worst situation where needy needs help but not able to seek it. So by any means if emergency is detected and reported automatically to disaster management team, then these teams will be in position to rescue person in emergency, even before he/she knows about such emergency. To do so we would take help of all emerging technologies and available hardware sensors.

6. PRIVACY RISKS IN ANDROID

To explain the design of the privacy controls several initial measurements and analysis of today's Android applications have been performed. Enck et al., who developed the TaintDroid information-flow tracking system extended in our work, used this system to analyze 30 Android applications that required access to the Internet and either users' location, camera, or microphone. They found that half of these applications shared users' locations with advertisement servers. The problem is not unique to Android. Egele et al. used static analysis to track information flow in popular iPhone applications and found that many contained code to commit out the unique device ID. Smith captured network traffic to observe iPhone applications transmitting device IDs. The Wall Street Journal commissioned its own survey of 50 iPhone applications and 50 Android applications, besides employing a network-observation approach. The article surmises that these unique IDs are commonly transmitted so they can be used to profile user's behaviors across the applications.

7. EXISTING SYSTEM

The country where we live today 'India' is a developing nation and there is a hospital management system in the typical form i.e. where one should dial a number and call for the ambulance in the emergency situation. This system is rarely convenient by all of us. Also maintaining records in the file system is a tedious task. Normally, a system is set up on an independent android device that is wired or wirelessly linked to the gateway and then connected to the hospital. But the disadvantage of such systems is obvious: once getting out of the coverage of the range, the system won't work anymore. But most of the healthcare management system is divided from the emergency alarm system, which means that the users have to keep two systems at the same time. By looking this it is not convenient at all. According to these disadvantages, installing the systems on a cell phone is undoubtedly a better choice.

8. PROPOSED SYSTEM

We propose a system where we are developing an android application in which, if an accident occurs it will send a notification to known person as well as nearby ambulance along with the exact location of an accident. Also, it sends an alert message to the nearby hospitals. This system provides high-quality treatments and the most simple and fast channel for patients and their families. Our system has three main functions: emergency alarm message, nearest ambulance and hospital tracking along with the exact location of an accident and healthcare management.

9. PROPOSED MODEL

The proposed model has mainly two components. One is user component that is dedicated to run on the patient side. Another one is ambulance component that should be in another Smartphone to access to access the application which is managed by the ambulance owner. The application or the system which we have designed cannot run on the normal phones where there is no android OS. One more application is required for the hospital.

In this proposed system once the user has registered all the details including the three contacts of his/her close relatives, the user will be able to log in and use the app efficiently. Similarly, it is for the ambulance and the hospital management staff. After the successful logic of all the modules, the user or the patient who is in the emergency situation can tap the help button, the user's location with the message of help will be received by the ambulance. Once receiving the message to the nearest ambulance, if the ambulance is available it will reach the current location of the patient, and pick the patient. After picking up the patient the ambulance will inform the nearest hospital and in the meanwhile, the relatives will also get the text message regarding the scenario. Before the ambulance reaches the hospital, all the preparations will be done by the hospital management staff such as arranging the bed and so on.

The following figure demonstrates the model where the user taps the help button and receives a response by the ambulance and the ambulance informs the nearest hospital and also the relatives will be notified by sending the text message.
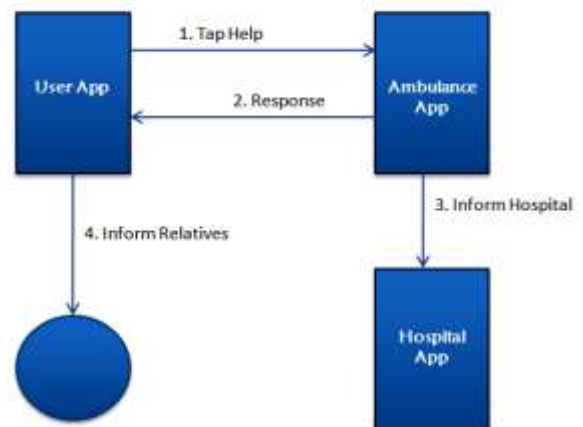

Fig 1:- Proposed Model

10. ARCHITECTURE

The architecture diagram of the proposed model is shown below. According to this proposed system after the patient taps the help button, the GPS with the help of 'Longitude and Latitude', will location the current position of the user or the patient who is in the emergency condition. This location will be sent to the nearest ambulance with the alert message and the abnormal condition. All this is connected to a central server, which interacts with the database system as and when necessary.

The GPS plays a very vital role in this system, where it manages to locate the position of the patient and these signals are also sent to the close relatives of the patient, whose contracts are being saved in the database can be collected.

The nearby hospital is informed that the ambulance is arriving from so and so location, by getting them a notification. So the further preparations are made.
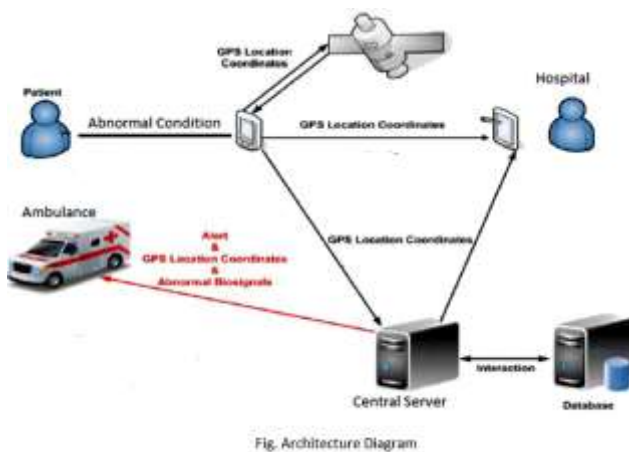

Fig 2:-Architecture Diagram

11. ADVANTAGES

- Easy Access.
- Alert Message.
- Central Server.

12. SOFTWARE REQUIREMENT

- Memory requirements : 40 GB of Hard disk space and 4 GB RAM
- Specific technologies, tools : Java SDK4.3
- Databases : SQL Lite
- Language requirements : Java (Android)

13. HARDWARE REQUIREMENT

- **CPU type:** Intel Pentium 4
- **Clock speed:** 3.0 GHz
- **Ram size:** 4 GB
- **Hard disk capacity:** 40 GB

14. CONCLUSION

This project aims to tackle the problem of hospital management where emergency situation arises so that the person in need can access the Smartphone with the Android app with ease. This system gives emergency alarm notification that helps at anywhere and anytime. This system provides high-quality treatments and the most simple and fast process of tracking nearest ambulance and shortest located hospital for patients and notifying his/her family members.

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