Android Based Application for Tracking of Nearest Hospital and Emergency Healthcare System

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Abstract— It has been noticed that there is remarkable of Electronic Health Record in Healthcare Management System, because people have experienced injury or sudden health conditions however, because of inconvenient transport or traffic controls, some of the injured peoples could not reach hospitals promptly, eventually dying. To reduce the time required for people to reach emergency care services and avert the above tragedies, an "Emergency Medical System" has developed. Emergency Medical System (EMS) is a comprehensive approach to emergency medical treatment in some medical emergency. It also describes a mobile system that allows electronic healthcare data storage, update and retrieval using Cloud Computing. This is an application in which the user would have to just press single click. Soon the device will send an emergency notification to a nearest hospital, the exact current position. When the doctor or family receives the notification, they can immediately take measures to rescue the user. It can also organize the health record of the user. The user can take online medical to send their physical situation and then get prescription from doctor who will send the prescription on the user's phone. This paper elaborates the enhanced Android based Tracking for Emergency Medical System (EMS) on cloud.

Key words: Emergency Medical Service, Hospital Tracking, Health Record, Cloud Computing

I. INTRODUCTION

This application is used to find out the nearest hospital for the emergency patients which is much faster and deliver's accurate results. So our main intention is to develop an android application taking "Medical Emergency" into count.

A. User Groups

Our system is developed basically by health conscious personnel. This application will be used by the client to deal with the problem which they are facing in day-to-day life.
User classes are elaborated as below:

1) User of the Application:

Client itself can use this application in case of any emergency to inform the family members and search the nearest Hospital.

B. Technical Capability

1) Administrator:

Administrator is the only person who can handle the whole system. She/he only has the right to deal with the confidential details.

2) DBA (Database Administration)-Admin:

All Database related things such as "Integrity", "Reliability", and "Consistency" are handled by the DBA-Admin. Administer will only have the right to access the Database Management System.

There has been a rapid increase in social pressure so most of the people are interfacing health problems, especially a lot of high-level personnel problems and modern social accidents occur frequently.

It is more paramount to design a health security system for people. As mobile phones are playing important role for people, it is the most convenient choice that the system will be situate on mobile phones.

Mobile phones bear Internet access, so when the user is not feeling well, he can log in the system, and their condition will be sent to the server.

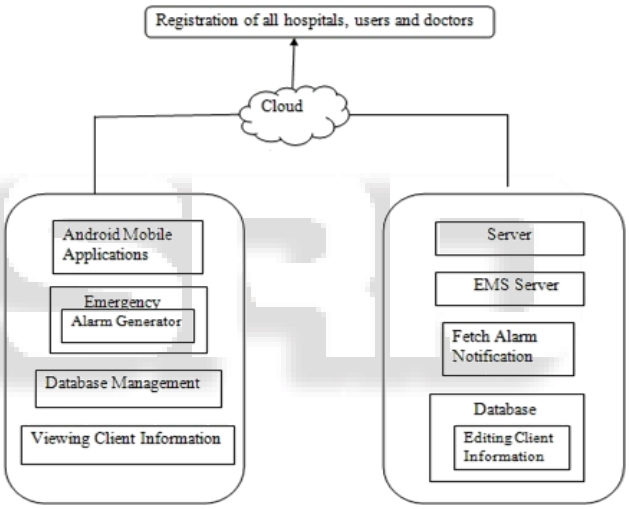

Fig. 1: System Architecture

C. Consumer Aspect:

1) In consumer aspect there are latest android phone through that the appliance run.
2) Graphics computer program of Electronic Health Record for filling personal and medical info on cloud.
3) Graphics computer program for editing the data and updating it on server.
4) Emergency are choose on the bases of the situation like accident, heart failure, burn case and so on and it'll send a notification at sever aspect.
5) Additionally contains some user helpful services like chase Blood Bank and Clinic Module.

D. Server Aspect:

1) Once the consumer sends request to sever, server gets activated and searches out nearest hospital.
2) It tracks out exact location of patient.
3) It fetches the coordinates and type of emergency from consumer.
4) Nearest Hospital will be searched relying upon variables received at server.

5) All the data of hospitals needs to be added into database that is present on cloud and update it frequently.
6) Generate EHR of patient by pressing the emergency button of phone just in case of emergency and send it to selected hospital for pre-medical treatments.

Doctor sends the prescription to the user's phone on bases of the user's condition so as to safeguard the user and obtain correct treatment. Once receiving the prescription sent to the user's mobile phone, it will remind the user to take medicine on the time.

There are numerous options that are provided to the user of the system and therefore the Hospital. Just in case of emergency, the system finds the best route for the closest hospital provide them alert with the placement of the patient. The system can provide nearest route to succeed in the hospital and detail concerning facilities of a selected hospital so user has the previous information of the hospital like beds accessible, variety of specialized doctor accessible.

The system also will maintain Health record which is relay on cloud and prescription given to the user for hospital's perspective, the system can offer all health related info of patients with prescription to the hospital as a carrier of emergency alarm and health care management system; there are a unit some blessings for telephone. The cell phone is convenient to hold. Individuals invariably carry a telephone with them, in an exceedingly case of emergency individuals will trigger an alarm and can get emergency service regardless of the situation familiar to them or not, anyplace and anytime. User can make a telephone to their friends and family, and with the help of GPS chip, their location is non-heritable. For this application, we elect mechanical man Phone as our platform. Android may be mobile software at first developed by Google. Mechanical man is Associate in nursing open supply system, therefore we are able to modify it to satisfy the particular desires by dynamical or redaction the source code.

The main objective of this application to produce quick emergency service to the patient during a case of emergency at freelance of his/her location on a click of a button moreover as it conjointly offer all health connected info together with medicinal prescription connected with the person to the hospital, for this

- The system can maintain the health record of the user.
- Make sure the situation of the user.
- Find the optimum path to the hospital.
- Maintain up so far standing of the hospital.

E. Non Practical Needs:

1) Performance Requirements:

As Emergency Medical Service main perform is to produce it user the list of domain specific hospital in his emergency therefore it has to be fast and acceptable in it call. While deciding hospital EMS ought to think about determined variable such as distance, emergency, vacancy and accessibility of doctors in hospital whereas giving user list of nearest hospital.

2) Safety Requirements:

The data handled within the Emergency Medical system is incredibly vast.

The server must always be confirmed to run properly and the knowledge are saved to the info whenever user save or change his knowledge and may additionally take the update type hospital like vacancy in hospital, accessibility of doctor and new emergency treated by hospital.

3) Security Requirements:

No different person not even admin different then user ought to have the right edit his data.

Security to the user's medical and personal data as this data goes to be send to chose hospital for premedication and if any changes are created during this data then it will produce nice drawback for the patient and doctors additionally.

4) Maintainability:

The system are going to be developed exploitation the quality software package development conventions to assist in straightforward review and redesigning of the system. The systems are going to be protected by a full edge documentation of the merchandise which is able to be offered online additionally as liberated to transfer.

5) Availability:

The system is offered on demand. Solely factor user needs to do is to put in the appliance on his robot phone and register to the EMS server by giving all needed data.

6) Supportability:

The system is in a position to support robot a pair of.3.3 and forwards.

II. PROPOSED SYSTEM

Proposed system is exploitation A* formula for nearest route finding with its specialty. A* uses heuristic approach to search out nearest node at intervals totally different cluster. The alarm action can send emergency messages and calls to the users close Hospital; the emergency message can embody the placement information, so as for the rescue stuff to find the user and health record of the patient.

A. User Handler Part:

In this part of the projected system user area unit capable of saving the numbers that they require to send SMS and demand help in emergency things. This part is extremely necessary within the perspective of connecting to the individuals in their family, also with the hospitals and police stations.

Mistreatment "Setting" button gift on "Help" button of mobile screen user will save, edit, and delete any contacts numbers and create changes that they require.

B. Location Chase Part:

Location chase is that the most useful and promising innovate the projected system to create the system additional increased and useful. With the assistance of GPS the system i.e. mobile device can mechanically track the situation of user from Google Map. The device can track the situation within the style of meridian and latitude together with the address of that space wherever the user is gift. Along with chase the situation of user the system is in a position to trace station and hospital that is found nearer to the user so that the system can send messages and calls to contact the station and hospitals. Many another systems fails to seek out precise location of the user however projected system had

worked to boost this part. However this recently projected system is in a position to trace the exact location of the one that fall within the emergency scenario and unable to assist themselves.

C. Message Causation Part:

This projected system tracks the situation of the user within the variety of line of longitude and latitude and beside the address wherever the user is gift in any space.

As presently because the user press the button gift on home screen of the mobile device or shake the mobile, the device can send emergency SMS to the pre-registered numbers. This message can contain line of longitude and latitude values, address wherever user is gift, and additionally link of the Google Map which is able to provide route to succeed in at emergency scenario.

This system send message repeatedly once some interval of your time. System can provide the situation of the user within the variety of line of longitude and latitude and additionally with address and therefore the link of the route to succeed in that person.

III. DESIGN METHODOLOGY

A. Authentication:

In this module, user authentication is completed according to the role primarily based access management. A brand new user needs to register for access the content of our system. Registered user logins with the registered username and positive identification. If the user is victimization the applying for the primary time then he will be prompted to fill a registration kind. After the registration, the user will use the applying directly while not having to register once more. Once the user is registered he's redirected to Main interface wherever he will read his previous crammed details and even edit them. This interface contains tab to pick out emergency and activate EMS server. The registration kind accommodates user`s personal and medical info in it. Fill personal info like name, address, age, gender so on and medical info like blood cluster, anamnesis etc. Personal info shows the information that user has given whereas registration. This Information is often helpful for doctors.

B. EHR (Electronic Health Record) on cloud:

There is some choice of implementing "cloud" technologies in care Management System. Electronic Health Record (EHR) as a service is perhaps the foremost appealing. The benefits of this model embrace the following:

- Users have unlimited access to the software system victimization any device connected to the web.
- The user isn't in chains to at least one stationary PC.
- Knowledge is often shared with different systems.
- All users access constant version of the software system.
- Maintenance and upgrades to newer versions are simple.
- Health care knowledge securities are improved.

Using the data over the server EHR of the patient are mechanically generated and forwarded to the selected hospital for pre-medical treatment. Huge info is maintained of all the hospitals, Clinic and bank over the server.

Thus correct data processing will be useful to trace out the best hospital in emergency case. The User or Patient can initial register to the applying and his knowledge are saved over the cloud. User can fill his or her personal and medical details whereas registration which can be patient to get Electronic Health Record (EHR).

C. Nearest Hospital Trailing:

This module keeps track of Nearest Hospital for the patient's victimization the variables that are primarily based on:

- Sort of emergency (for example: coronary failure, Paralysis, Accident)
- Accessibility of Doctor and
- Distance from the patient.

D. Bank and Clinic:

We will maintain knowledge of clinic and bank over the server. This can be used as a refill to search out clinic in town for specific specialty (for example: specialist, Eye Specialist, medical practitioner) and additionally realize bank.

IV. RESULT

An application will be develop for android phones. Results are formed such as Android EMS and Patients details. Figure given below, gives the idea about Android EMS in this SQL query also executed as well as present the database using PHP MyAdmin.

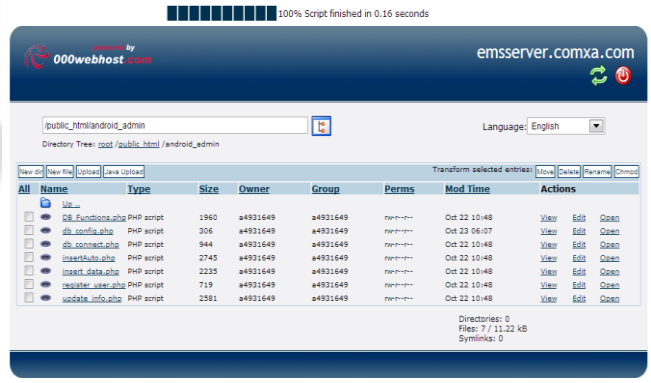

Fig. 2: Snapshot of Android EMS

After analyzing it found that fields shown in Fig.2 are require in order to get required result and have complete information of patients. Figure given below is a basic look of how and what details are to be filled of patients.

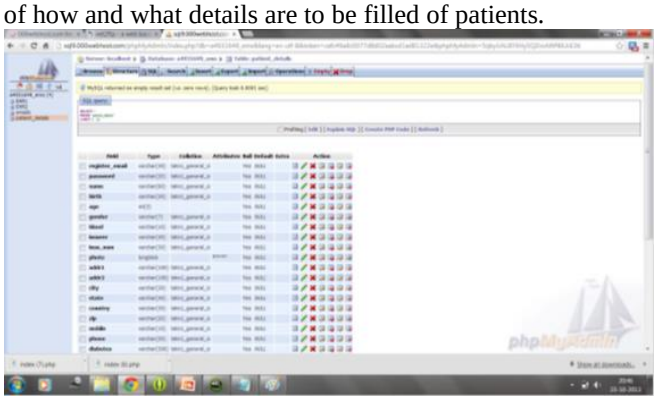

Fig. 3: Snapshot of Patients Details

Information shown in the fig.3 is basically known as medical history of patients. All the required information of patients will be filled by the authenticated person and

he/she will only have the right to change and update the information. Patient will only have the right to view his details and the prescription given by the doctor, so that they can take medicines at time.

Result will be totally depends on clients and situations:

- Patient as client: Finds the Nearest Hospital.
- Doctor as client: Track the location of Patient.

V. CONCLUSION

Electronic Health Record may be a key issue enjoying associate important role towards the flourishing adoption of mobile healthcare systems. EHR assist the chronic patients with additional convenience and safety by providing medical details of user for premedical treatments.

EHR may be additionally employed by folks to keep and maintain their health record on cloud for convenience, safety and future work is Implement Nearest Distance trailing algorithmic rule, trailing completely different Parameter like Blood module, Clinic Module. Hospital data Maintenance and info update, readying on Cloud Improve the Graphics interface.

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