MEDICAL SUPPORT SYSTEM IN CASE OF ROAD ACCIDENT

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Abstract- In the last decade, many useful applications for the mobile devices are designed to the deal with health care issues under Android platform. In propose system, an emergency service for mobile devices will be designed. In this, the position function of Global Position System (GPS) and a user friendly interface which will track the location of ambulance is provided. The application is a capable for the sending emergency notification or phone calls are also included. Nearest hospitals which is a provides ambulance service are also enlisted with their respective contact details. We How to the connect people with this provided service for emergency service. Android phones we are using a daily due to its features like GPS, GSM, GCS, Computing ability and internet connection. Now-a-days there are many application of android which helps user to provide solution to many problems related to their day to day life. Traffic congestion and Road accidents are the major problems in the urban areas. Also due to the delay in a reaching of the ambulance to the accident location and traffic congestion in between accident location and hospital increases the chances of the death of patient. So in order to provide solution for this problem, we are developing. An android application which will be detects the accident event automatically and also sends notification to nearby emergency contact services like hospital, ambulance, police station along with his personal information.. It uses GPS location for recognizing the accident. Personal information like blood group, photograph, and age like details will take at the time registration of user. If an accident event detect then notification will send along with this information to the emergency service centres.

Keywords- —— Maintain record, blood bank, generate QR code, suggest shortest path to ambulance.

I INTRODUCTION

In Android phones, we are using them daily due to its features like GPS, Computing ability and internet connection. Now-a days there are many application in android which helps user to the provide solutions to many problems related to their day to day life.

We are using Global Positioning System (GPS) for tracking of nearest ambulance and hospital. It requires GPS supported android device with the application installed on it for the user. In critical or emergency situations where accident occurs there is urgent need for ambulance. It requires lot of time to make it available and it is inconvenient during emergency situation, In critical or emergency situations where accident occurs or during on-going treatments and surgeries etc there is urgent need for specific blood group. It requires lot of time to make the blood available and it is inconvenient during emergency situation, some rare blood groups are time consuming and difficult to arrange which are O-, AB- etc. In our country there is less awareness of blood donation, near about 20% of Indian population donates blood.

We are using Global Positioning System (GPS) for tracking of nearest blood donors to blood banks. It requires GPS supported android device with the application installed on it for the user.

As the code can be easily decoded by the camera of the smartphone, this technology is increasingly accessible to the average person. The codes can be used to the store information of user. A QR code acts as a link embedded in a real world, integrating with the virtual computer world.

GPS-

GPS means A space-based satellite navigation system provides location and time Information in all weather. The Global Positioning System (GPS) is a satellite-based Navigation system developed.

GSM-

Global system for mobile communication, a mobile phone based system on multiple radio cells. GSM modem is used to send information collected from GPS module along with other details to a specific mobile number.

Motivation behind Project Topic

➤ Our motive is to provide medical needs to needy persons immediately. Provide urgent for specific blood group. Suggest doctor as per patient's disease through mobile app.

➤ Remind them for their medicines time to time through app. Provide prescriptions through app instead of paper.

Aim and Objectives of the work

Project Aim:

- The aim of this project is to develop a IOT based system is to provide medical emergencies immediately.
- Provide specific blood group urgently.
- Provide ambulance service urgently.
- Provide specific doctor as per disease.

Project Objective:

1. Admin search nearest ambulance and inform to driver about user location.
2. Medical store owner scan new QRcode and provide medicine as per prescription.
3. To make system available at any time.
4. To make system accurate and error free.
5. To provide medical help immediately to injure person.
6. To help to injure person for hospital and police formalities.

II LITRATURE SURVY

Title: Call Ambulance Smart Elderly Monitoring System With Nearest Ambulance Detection Using Android and Bluetooth.

Author : S.Pradeep Kumar,D.Akash,K.Murali,4R.Shriram.

In the real world, patient has to be monitored by the person present in the home or by the helpers. There is no automatic alerting system being implemented so far. In this paper, the condition of the Patient is fully monitored with the help of Micro-Electro Mechanical System (MEMS), Heart Beat, Temperature and vibrations Sensors that are connected through wireless communication. These sensors, senses the various parameters of the patient and those parameters are monitored by an android phone connected through Bluetooth communication. In case of any emergency Mobile GPS is automatically triggered and the message is sent to the Server via mobile GSM. The Server will calculate the nearest path to reach the Ambulance and also sends an alert SMS to the relatives.

Title : Demand Forecast using Data Analytics for the Pre-allocation of Ambulances

Authors : Albert Y. Chen, Tsung-Yu Lu, Matthew Huei-Ming Ma, and Wei-Zen Sun

The objective of pre-hospital Emergency Medical Services (EMSs) is to have a short response time. By increasing the operational efficiency, the survival rate of patients could potentially be increased. The Geographic Information System (GIS) is introduced in this work to manage and visualize the spatial distribution of demand data and forecasting results. A flexible model is implemented in GIS, through which training data are prepared with user desired sizes for the spatial grid and discretized temporal steps. We applied Moving Average, Artificial Neural Network, Sinusoidal Regression, and Support Vector Regression for the forecasting of pre-hospital emergency medical demand. The results from these approaches, as a reference, could be used for the pre-allocation of ambulances. A case study is conducted for the EMS in New Taipei City, where pre-hospital EMS data has been collected for 3 years. The model selection process has chosen different models with different input features for the forecast of different areas. The best daily mean absolute percentage error during testing of the EMS demand forecast is 23.01%, which is

a reasonable forecast based on Lewis' definition. With the acceptable prediction performance, the proposed approach has its potential to be applied to the current practice.

Title: A Mobile Solution for Fast and Accurate Medical Emergency Reporting

Author: Esraa I. Abou El Safa and Ghada A. El Khayat

In life-threatening situations in which a second counts, the availability of an efficient and effective Emergency Medical Services (EMS) system can make the difference between life and death. In spite of this fact, healthcare institutions in developing countries did not give the necessary attention to the development of their EMS systems. A primary measure for an EMS system performance is its response time. Response time is divided into several components. However, almost all literature tackling its improvement focused only on the travel time component. In this research, the time taken to report a case is also considered to improve response time. A mobile application for the citizens' use is proposed. The application works with other corresponding applications in the EMS system side. The contributed application is a component of an integrated system that comprises also ambulance dispatching, and relocation tools that lower response time. It enables easier, faster and accurate incident reporting and better call screening. The proposed solution also provides a secondary dispatch strategy that can be used jointly with the primary central dispatch strategy in cases of high emergency to lower the overall response time. Data collected by the application will potentially support decisions like where to locate new ambulance stations. The system aims to develop the Egyptian Emergency Medical Service (EMS) system. However, it can be easily adapted to other EMS systems in different countries. In a future research, a complete integrated system will be presented. Its effectiveness will be tested and results will be communicated.

Title: QR-code based Hospital Systems for Healthcare in Turkey

Author : Vassilya Uzun

Our system consists of QR-codes placed in various places of the hospital and QR-code reader applications, installed on smartphones or tablets, which scan the QR-codes in order to obtain vast amount of information. Moreover, several copies of the QR-code are produced for patients admitted into the hospital. The QR-code is used wherever the identification of the patient is required. Furthermore, we introduce the system accessing the medical information network in Turkey by utilizing QR Identity Tag. The QR Code Identity Tag allows its members to be able to control their own Emergency Health Record such as carrying the information on themselves or editing them. We chose QR-code because it is a cost-efficient solution, which is of importance for developing countries such as Turkey.

III EXISTING SYSTEM

In existing system there is no specific system that provide recommendation of doctor as per symptoms. Doctor provide prescription on paper.
 • Blood donor finding not possible due to lack of blood donor information. For ambulance, user need to call hospital.
 • When an accident occurs the information only the sent through GSM but there is no possibility to the locate the spot.
 • Currently there is no technology for the accident detection. As it is done manually there is loss of life in the golden hours.
 • In addition if this there is delay in the ambulance reaching the hospital due to the traffic congestion between the accident location and hospital which increases the chances of the death of victim.
 • Amin et al.[1] use GPS for measuring the speed of the vehicle every one second, and compare the acceleration to see if some external decelerating force has acted to cause an accident.
 • But the GPS used is not reliable as dense foliage , caves , harsh weather, polluted air and "urban canyons" like high rise concrete buildings can the sometimes cause system interference issues and can risk an accident going undetected in a long drive. GSM is used to alert the service center. Zaldivar et al .[1] and Jules White et al[1] use costly smart phones for accident detection and for relaying the accident coordinates and hence, lacks a dedicated system for the same.

IV. PROPOSED SYSTEM

Propose system contain different modules they are as follows:
1. User/Patient
2. Doctor
3. Medical Store Owner
4. Blood Bank
5. Ambulance

Driver In propose system user register into the system with personal information. System encrypt user information by using AES algorithm, and generate QR code of encrypted information. User provide symptoms and search doctor. System suggest doctor on the basis of symptoms and current location. In this system, we address the problem of delay minimization, right from the detection of an accident till the victim is safely handed over to the casualty. The design of the main server, which tracks the ambulances and dispatches the nearest ambulance to the accident spot. The android application, which guides the ambulance driver to the accident location. It is important not only to relay the information to the nearest ambulance, but also to guide the ambulance driver to the accident location in order to minimize any delay that may occur. The android application developed uses Google Maps API web services like traffic layer, and enables the driver to choose a route with less traffic. The locations of the

ambulances are constantly conveyed to the server through smart phone every 15 seconds.
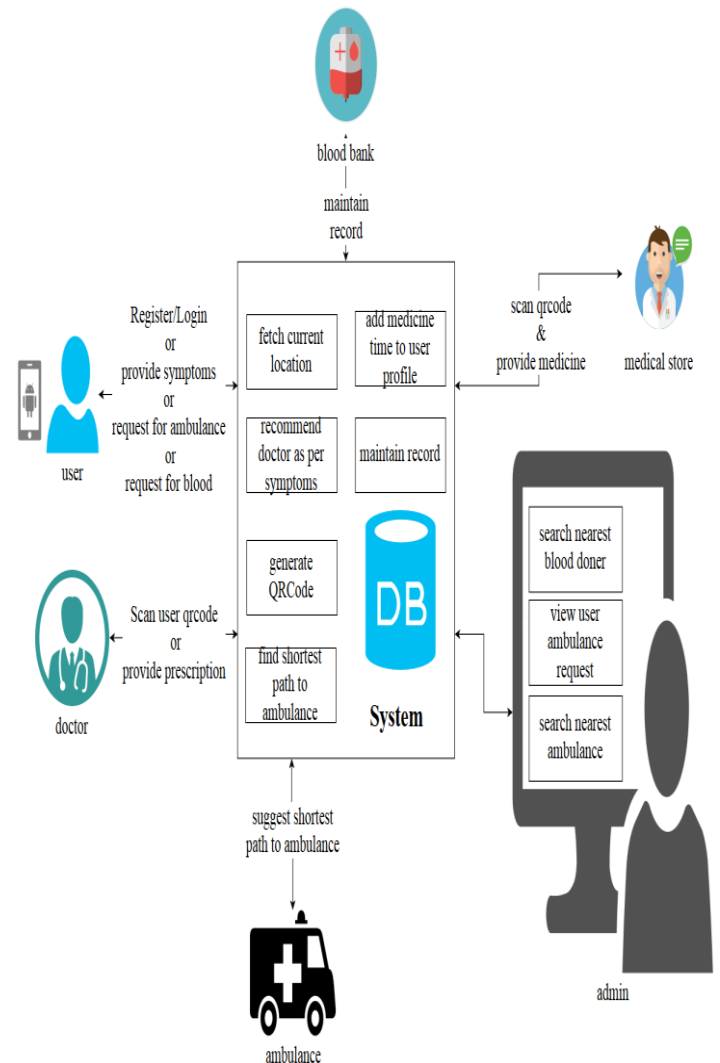
V. SYSTEM ARCHITECTURE

Figure 1: System Architecture

VI. CONCLUSIONS

In this system, we have described a system offering a solution to the problem of ambulance management and emergency incident handling. It is based on the integration of GIS, GPS technologies. Application significance the routing of ambulances to incident sites and from these to the closest appropriate hospitals. A major advantage of GPS is to detect patient location and nearest medical service that will rich as early as possible. Hospital formalities will done automatically according to registration detail. The key idea of developing this module is to provide timely help to the patient and elderly people in critical situation. An alert message about patient's condition is sent to the caregiver for immediate help. By using GSM module in Android phone notification messages will send effectively to hospital, ambulance, blood bank.

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