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Emergency Management Services

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Abstract: *Mass casualty incidents (MCIs) have caught more attention of the society during the past few years. Disaster is one of the most common reasons causing a MCI. It is defined as "a serious disruption of the functioning of a society, causing widespread human, material or environmental losses which exceed the ability of the affected society to scope using only its own resources" by the United Nations Disaster Management Training Program (UNDMTP). Though many prevent preparations can be done to prevent an incident or at least reduce the casualty when one happens, natural disaster is unpredictable. Proposed System mainly focuses on the incident response and rescue process--- the period between the occurrence of the incident and the accomplishment of all evacuations. During this period, Emergency Medical Services (EMS) plays an important role by providing effective, responsible pre-hospital care. Their performance influences the chance of survival among victims. In this system we introduce the user interface design for EMS system. With an Android device, EMS provides emergency personnel the ability to collect information in real time, track the resources and manage them. It allows the responders and commanders to manage multiple incidents simultaneously. We propose to implement two apps, namely commander app and responder app where responder will report the real-time situation status of the victim, exact geo-location and level Criticalness to the command center. In response to the report notification will be provide to the EMS to attend the victims accordingly*

Keywords: *Android & Java.; MySQL; Android SDK & NetBeans;*

I. Introduction

Mobile Heath (m-heath) is the practice of medicine and public healthcare supported by mobile devices [1]. It is an emerging research field for healthcare systems of developing nations like Bangladesh where high population growth, a high burden of disease prevalence are felt. Moreover, the flourishing growth of mobile phones and heavy requirement of emergency medical assistance pave the way to develop emergency medical healthcare applications. Mobile health applications require an understanding of where consumers are, where they have been and where they are going. Wireless mobile devices can continually transmit device (user) location to such applications which can be used in a sensible way. The integration of location-sensitivity along with other information as to provide added value to a user is location based service (LBS) [2]. So, location based service (LBS) provides information about surroundings of user with locationenabled mobile devices via GPS (Global Positioning System) or mobile phone network. On the other side, there has been an alarming rise in road accidents, significantly highway accidents, in Bangladesh over the past few years. Lack of information about nearby hospitals, clinics, and diagnostic centres may cause the death of victims of the accidents. To face this type medical emergency, people might have to know information about the healthcare facilities e.g. hospitals, clinics, and diagnostic centres around the place where the accidents occur. A new comer, a tourist, and a visual impaired people may face difficulty in having emergency medical help without this information. For this, we have proposed a location based emergency medical assistance system on mobile phone utilizing OpenStreetMap (OSM). The main difficulty of our system was that the healthcare TGPCET/CSE/2018-19 2 centres were not mapped in the country like Bangladesh. We have taken the waypoints of healthcare centres (hospitals, clinics, and diagnostic centres) around Chittagong city and mapped on OSM which is a rapidly growing open source map of the world. OSM is a collaboration project with Wikipedia to create a free editable map of the world [3]. Anyone can use and enhance this map because of the availability of map information across the world and the advent of inexpensive portable GPS devices. The development of OSM across the world is also very fast. So, OSM has achieved the popularity to use instead of using restricted and commercial Google map. So, our proposed system is divided into two parts: first part is the mapping of medical healthcare information around Chittagong city and second part is the development of location based medical assistance (LBMA) system which is also an android platform based smart phone application to render location based services showing both brief and detail textual information on the application as well as audio direction of healthcare points around current

location for visually impaired people during any emergency situations

II. Background

Java

The Java programming language itself is an object-oriented language, which is syntactically similar to C++. Unlike some other languages which came before it, which implemented classes but did not require their use, Java programs are always designed with an object- oriented design. While the Java language and the Java virtual machine which runs Java code are closely paired, the two are separate. Code from other languages which is designed specifically for the JVM, like Groovy and Scala, can also run on the Java virtual machine. Be careful not to confuse Java with JavaScript. While both languages are now found in numerous environments, JavaScript, which is most commonly used to power interactivity inside of a web browser, is a different tool completely. Other than a part of the name, the two don't share much in common

Android

Android is a mobile operating system developed by Google, based on a modified version of the Linux kernel and other open source software and designed primarily for touchscreen mobile devices such as smartphones and tablets. In addition, Google has further developed Android TV for televisions, Android Auto for cars, and Wear OS for wrist watches, each with a specialized user interface. Variants of Android are also used on game consoles, digital cameras, PCs and other electronics. Initially developed by Android Inc., which Google bought in 2005, Android was unveiled in 2007, with the first commercial Android device launched in September 2008. The operating system has since gone through multiple major releases, with the current version being 9 "Pie", released in August 2018. The core Android source code is known as Android Open Source Project (AOSP), and is primarily licensed under the Apache License. Android is also associated with a suite of proprietary software developed by Google, called
Google Mobile Services[10] (GMS) that very frequently TGPCET/CSE/2018-19 16 comes pre- installed in devices, which usually includes the Google Chrome web browser and Google Search and always includes core apps for services such as Gmail, as well as the application store and digital distribution platform Google Play, and

III. Existing System

To identify and track the triaged victims, paper tags are mostly used in current patient tracking system. After patients are categorized by emergency responders, they are tagged with a visible indicator (triage tags) of their priorities. Several commercially available tag systems are used such as METTA GandMultiTag. Each tag is preprinted with a unique number, a section for patient information, and a section with tear off strips to categorize the patient's current condition. The evacuation process begins when some victims are triaged with priorities. The casualties with the highest priority are moved to a triage category specific collection point for further on site treatment and/or transportation. The walking wounded (green) are readily separated from more seriously injured casualties through good crowd communication and control; most of these casualties could be treated in an urgent care center, clinic, or private associated development platform. These apps are licensed by manufacturers of Android devices certified under standards imposed by Google, but AOSP has been used as the basis of competing Android ecosystems, such as Amazon.com's Fire OS, which use their own equivalents to GMS physician offices. Dead victims are suggested to be transferred to an isolated location.

IV. Proposed System

We propose to develop an android based Emergency Medical Assistance System, where any user can help the victim or patient by notifying the medical service provider through this app. To make the incident spot and patient tracking more easy and accurate we propose to use the GPS for accessing the proper location.

V. Methodology

Step1: User registration
Step2:login with user
Step3;then user seen two interface
1.Report Incidence
2.Get Status
Step4: User send the the incident pic to the server with their current location according to GPS
Step5:then responder notify the incident report

It will send the ambulance to the current location

VI. Conclusion & Further Work

6.1Conclusion

In this report we described the design and implementation of EMS applications. Both of them are designed based on requirements and feedbacks of real trials. A comprehensive communication solution is also developed and tested to handle the data transmission between all the components of EMS. This system presents the Emergency location tracking system using GPS network, suitable for wide range of applications all over the world. The combination of the GPS provides continuous and real time tracking. Google map is used to locate the EMC and patient .It is expected that the full implementation of the proposed system would ultimately replace the traditional tracking systems.

6.2Further Work

The future work of DIORAMA applications includes the following: Firstly, the shortest paths generated from area division algorithm can be used to give responders suggestions of how to get to the victims. Because the routes are generated using the previous experiences of triage, emergency personnel can easily discover the obstacles, inaccessible areas and find a best path.

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