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Emergency Accident Assistant Using Geo-Tagging

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Abstract—Accident Application is the first and only mobile phone application to offer free, instant, on-the-scene, live assistance to accident victims. Even better, our App also provides access to emergency personnel and step-by-step guidance through the information gathering process to ensure that critical victim can be saved.The world would be a much better place if there were fewer car accidents. Car accidents happen daily and regularly these days. They leave pains behind for the victims' families. Many people think that they will never get involved in car accidents. They don't wear their seat belts, they drive after drinking, and they use their cell phones while driving. They do all these things without even giving a second thought, yet all these things are preventable. No one knows what will happen to them in the future except for God thus, they should always stay alarmed. People don't realize that doing those minor things cause them severe pains or even deaths. Use the app's Accident Recording System to easily document and send us every detail with pictures, audio witness statements, injury charts, car damage picture documentation and much more. Accident App creates an accident report, with attached pictures into a single email that you can send out to all necessary Information (such as address,Pictures, etc).

Keywords—*Smartphone Application; Accident Detection; Geo-tagging; Capturing images.*

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I. INTRODUCTION

With the expansion in mischances and other crisis circumstances, numerous lives are lost in light of deferred reaction and emergency treatment help. This deferral is going on because of numerous reasons yet one of the primary reason is the alleviation vehicle driver does not think about the crisis area. The study was finished building up a system which can be effectively used if there should be an occurrence of any crisis circumstance. This study manages the two noteworthy periods of crisis administration which are readiness and reaction and salvage. Data (street system, clinics, and historic points) about the study region is gathered and is then put away in the database for future use.

The study is partitioned into sub-destinations which when consolidated will give a crisis reaction framework. Utilizing virtual globe, perception of study territory is done in 3D alongside it constant following of alleviation vehicle is done, in order to know where the help vehicles are. The framework is giving crisis implication office by call or message; by utilizing the alleviation vehicle's area and crisis recognize, the framework is giving the most limited course. It is additionally giving the data about the closest healing center. [1]

Any situation that can cause a sudden risk to human or animal health, their life and property or to the environment is classified as emergency. It is a result of a disaster occurred due to natural phenomenon or technological mishap. To reduce the loss; an immediate intervention is required so that emergency can be confined in a small area and there is no or minimum damage. Emergency management is to avoid and deal with man-made as well as natural disasters. It includes a pre-disaster and post-disaster plan that is to delay or reduce the vulnerabilities or potential damages, minimize the destruction during emergency and reestablishment for the future. The most important task in disaster management is to minimize the difference between the pre- and post-disaster conditions in a community. Disaster cannot be predicted as per their occurrence and impact. They can harm either the environment or property or worst to the resources or civilization present there.[2]

II. REVIEW OF LITERATURE

The writing was contemplated to address the points comprehension of the examination territory, concentrate on the exploration questions, arranging of the information gathering approach, elucidation of the significance of the

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terms, appropriate recognizable proof of the system. The most imperative errand was to comprehend the examination area which is crisis and debacle alongside its administration. Experiencing the writing, the attention was on the best way to build up a framework which can satisfy the necessities of alleviation associations and the framework ought to be straightforward. At that point the emphasis was on comprehension the importance of various terms, and after that in building up a system which can satisfy the destinations and answer to the examination questions.

The fundamental center is to give an auspicious reaction framework amid the seasons of crises and calamities. Fiascos and crises are a piece of our life since one can recall. Crisis reaction is a zone which is picking up a considerable measure of interest however the productions in this field are restricted when contrasted with others. The outcome, examination and finish of earlier productions must be as per the conditions starting now, in order to have appropriate approval and check. The work of D. McEntire, T. Drabek and E. Quarantelli in the field of catastrophe and crisis administration has high noteworthiness that they are refered to even after over 25 years of distributions. No individual, group or nation is insusceptible to debacle. Accordingly debacle readiness, salvage and recovery are the best approach to adapt up to the catastrophe or crisis. This crisis can be little or can spread quickly if a convenient reaction is not gave. Associations like FEMA, Red Cross or 108 get ready for any sort of crisis be it a terrorist assault or any man-made or regular fiasco.[4]

Crisis reaction and administration needs data and data innovation to concentrate on the information, do investigation and give some sort of result to give quick alleviation. A compelling handling of data ought to deliver advanced representation for a typical operational picture. These representations guarantee that imperative and important data goes to the suitable leaders to settle on right choices, and from an all-encompassing point of view give vital bearing to crisis responders. Study by Camp and associates in the year 2000 ablaze Figurehters' work on crisis area infers that radio correspondence can be upgraded by prototyping radio correspondence qualities that handle the structure of crisis reaction work level .Response to any crisis begins with the relief, readiness and reaction to it, which is regularly trailed by recovery and remaking of benefits. (Cutter 2003) highlights the utilization of GI science in different strides of crisis administration cycle. [7] It additionally raises the issue confronted amid crisis circumstances like client interface, on the off chance that it is reasonable or not; information amount and quality, continuous data and information support, Geo-Enabled Real Time Emergency Response System utilizing Open System Architecture.[5]

III. PROBLEM STATEMENT

The utilization of GPS on cell phones in the late eras of versatile correspondence is one of the ever-display applications that are broadly created and utilized. Be that as it may, utilizing those GPS as a part of instance of crisis, for example, mishap, where there is no client communication

will be troublesome exertion. Android is another but then powerfully creating portable stage and all partner of use are being embraced to minimize the frameworks necessity. Consequently Android can respond in due order regarding this, by building up an application which can tackle the aforementioned issue.
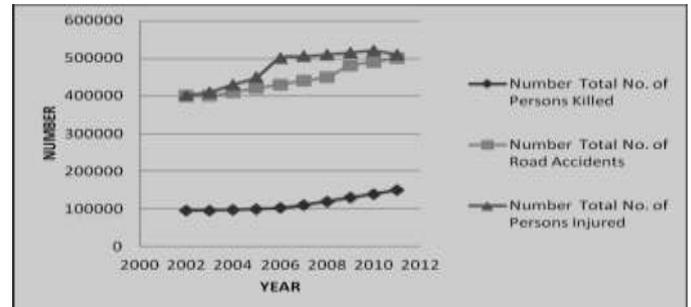

Figure. 3.1: Total number of road accidents, persons killed, and Persons injured during 2002-2011

Therefore it is proposed to develop a application based on android platform which will help to send the GPS data with remote server and eventually serve the purpose of emergency situationlocation information sharing to theappropriate authorities such as hospitals, relatives, traffic police etc. in case of traffic accident.[9]

IV. WORKING OF EMERGENCY ACCIDENT ASSISTANT

1. Location Based Services (LBS)

The advent of different technologies such as wireless networks, Internet, Geographical information systems (GIS) and Global Positioning Systems (GPS), have introduced a new type of information technology called Location Based Service (LBS). LBS is defined as the ability to locate a mobile user geographically and deliver services to the user based on his location. According to Schiller J.(Schiller *et al.* 2004) Location based services can be defined as"services that integrate a mobile device's location or position with other information so as to provide added value to a user". So knowing your location or how far you are from a specific location would not be valuable by itself. Only if it can be related to other location this gives it meaning and value. [11]

LBS is an information and entertainment service, accessed through mobile devices using the mobile network and employing the ability to make use of geo-location of the mobile device. A LBS services can be used in a variety of contexts, such as health, work, personal life, etc. LBS include services to identify the location of a person or object, such as discovering the closest hospital or the whereabouts of a friend or employee. [9]

LBS services include parcel tracking and vehicle tracking services. A positioning component is usually needed in a LBS application to determine the location of user's mobile device. Most of the current LBS services do not require users to input location manually, like entering zip code or street name in LBS application. Instead user's

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location can be obtained by using some positioning technologies, such as satellite positioning, cellular network positioning, WLAN stations or radio beacons.

2. Data Collection and Capture:

For creation of a location based service, we require different data from different sources. The data required is the road network, landmark geo-location and dynamic data such as real time traffic report. This data can either be acquired by different sources or has to be created by the developer.
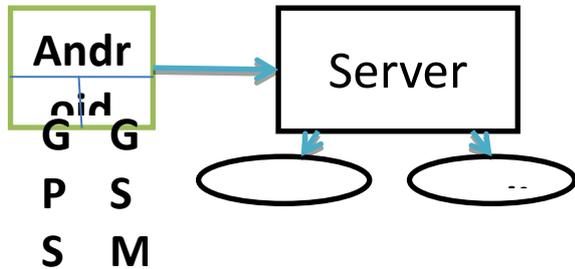

Figure 4.1 Geo-tagging Concept

Map data are stored in a vector format composed of line segments (links) representing the roads and connecting points representing intersections or other road features. Each link has start and end points and may also incorporate shape points to model the curvature of the Geo-Enabled Real Time Emergency Response System using Open System Architecture road.In addition to geometry, the data contain feature attributes such as one-way streets, exit signage, prohibited turns and man oeuvres, vehicle-height restrictions, bridges, tunnels, and street addresses.[7]
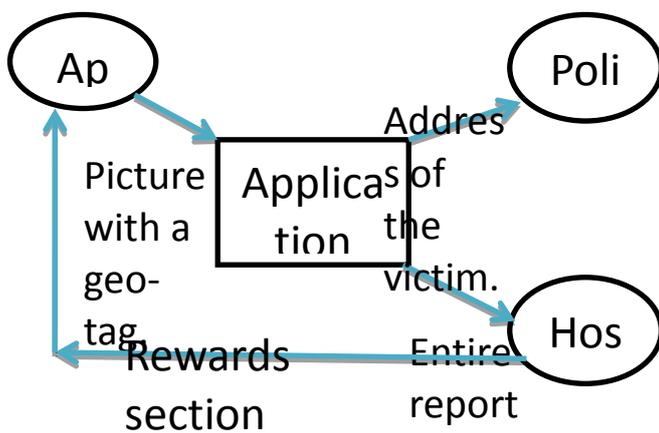

Figure 4.2 Data flow diagram

V.   RESULT

- Instant, on-the-scene accident assistance for the victim.
- An Accident app that walks you, step-by-step, through gathering the right information that is needed.

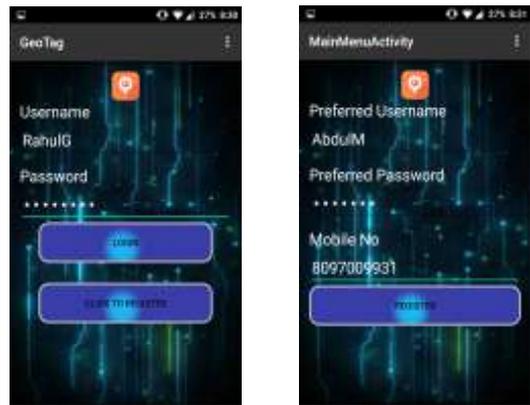- One touch access to send information at the nearest police station and hospital.

Figure 5.1 User Registration and Login**.**
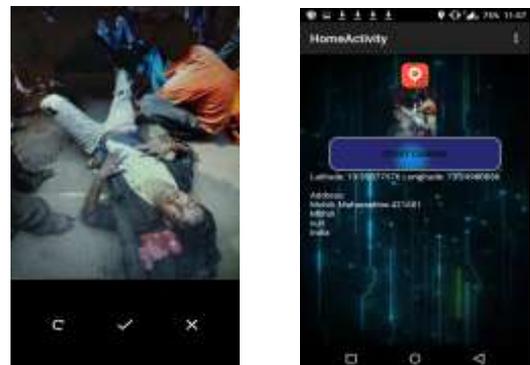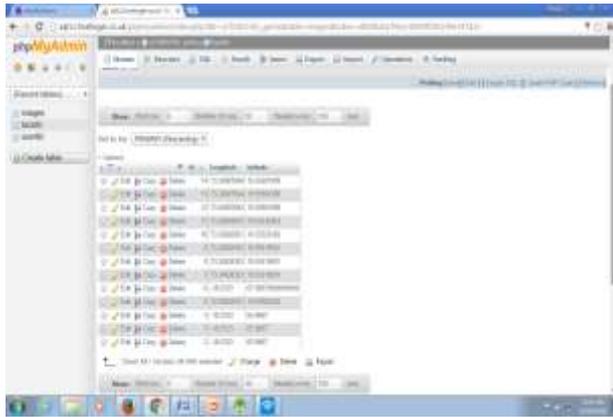

Figure 5.2 Authentication & Verification**.**

Figure 5.3 Geo-tagging of image.

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Figure 5.4 Server side: GPS location table.

Figure 5.5 Server side: Geo-tagged images.

Figure 5.6 Server side: User Information.

CONCLUSION

The study was proposed for developing a system which can pinpoint to the location (±15 m) and help in reducing the response time during emergencies. Geo-location and contact information of various places including hospital, police station and fire-station was collected; this can facilitate in passing timely information to all the relief centres and to reduce the time delay.Offline maps will be used for tracking the victim and to extract the longitude and latitude of the current place through which the victim can be helped out, without the means of internet. (SMS)

REFERENCES

[1] Agrawal, P., Rauschert, I., Inochanon, K, Bolelli, L., Fuhrmann, S., Brewer, I, Cai, G., MacEachren, A., & Sharma, R. (2004). Multimodal interface platform for geographical information systems (GeoMIP) in crisis management. In, *Proceedings of the 6th international conference on Multimodal interfaces* (pp. 339-340): ACM

[2] AmitKushwaha, V.K. (2011). Location Based Services using Android Mobile Operating System. *International Journal of Advances in Engineering & Technology*

[3] Applet, D.E., Hobbs, J.R., Bear, J., Israel, D., & Tyson, M. (1993). FASTUS: A finite-state processor for information extraction from real-world text. In, *IJCAI* (pp. 1172-1178)

[4] Arnold, S., Arnold, W.D., &Langsenkamp, A. (1996). Automated calling system with database updating. In: Google Patents

[5] Highlights of 2009 Motor Vehicle crashes, Traffic Safety Facts, Research Notes, NHTSA (National Highway traffice Safety Administration). [Online]. Accessed on 16 October 2011. Available: http://www-nrd.nhtsa.dot.gov/Pubs/ 811363.PDF

[6] N. Virtanen, A. Schirokoff and J. Luom, "Impacts of an automatic emergency call system on accident consequences," in Proc. Of 18 th ICTCT, Workshop Transport telemetric and safety, 2005, pp. 1-6.

[7] S. M. Tang and H. J. Gao, "Traffic-incident detection-algorithm based on nonparametric regression," IEEE Transactions on Intelligent Transportation Systems, vol. 6, 2005, pp. 38-42.

[8] L. Chuan-zhi, H. Ru-fu, Y.E. Hong-wu, "Method of Freeway Incident Detection Using wireless Positioning," in Proceedings of the IEEE International Conference on Automation and Logistics, 2008, pp. 2801-2804.

[9] C. Thompson, J. White, B. Dougherty, A. Albright, and D. C. Schmidt, "Using Smart phones to Detect Car Accidents and Provide Situational Awareness to Emergency Responders," in 3rdInternational ICST Conference on MOBILe Wireless MiddleWARE, Operating Systems, and Applications (Mobilware 2010), 2010.

[10] D. A. Whitney and J. J. Pisano TASC, Inc., Reading, Massachusetts, "Auto Alert: Automated Acoustic Detection of Incidents", IDEA project, [Online]. Accessed on 15 October 2011, Available: http://pubsindex.trb.org/ view.aspx?id=481489.

[11] R. K. Megalingam, R. N. Nair and S. M. Prakhya, "Wireless Vehicular Accident Detection and Reporting System," in International Conference on Mechanical and Electrical Technology (ICMET 2010), 2010, pp. 636-640.

[12] Speed and Accident Risk, EuropianCommision Road Safety, [Online] Accessed on 07 October 2011 Available: http://ec.europa.eu/transport/road-safety/specialist/knowledge/speed/speed-is-a-central-issue-in-road-safety/ speed-and-accident-risk.htm, Accessed on: 07 October 2011

[13] R. Elvik, P. Christensen, A. Amundsen, "Speed and road accidents: an evaluation of the Power Model," TOI Report, [Online]. Accessed on 12 October 2011. Available: http://www.trg.dk/elvik/740-2004.pdf

[14] NMEA 0183 Standard, [Online]. Accessed on 16 October 2011. Available:http://www.nmea.org/content/nmea-standards/nmea-083-v-400.asp, Accessed on: 08 October 2011.

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