

Emergency Contact for Real World Social Community

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Abstract: Android is a java based operating system which runs in the Linux 2.6 kernel. Android applications were developed using java that can be ported to new platform easily thereby fostering huge number of useful mobile applications. The system describes about a SOS application that is being developed and it has been successful implemented. The application whose target users are those sections of the people who falls into situation where instant communication of their network becomes indispensable to be informed certain authorized persons at remote end. The software is developed with the Android App with the automatic notation upon finding important locations using GPS Locator. The application enables the users to find the exact location of the Hospitals, Fire Stations, Police Stations, Blood bank and Ambulance that result from their better applications of technology during emergency periods. This application is used by registering the user details i.e. Name, Contact number, Address then save the details of the concern person. It will navigate the user to desired window using of Android “Smart Phones” and the GPS locator.

Keywords: Google maps, GPS, Wi-Fi Signals, Emergency contact.

I. INTRODUCTION

The real world problems can be expressed in many ways and solution to those problems are derived through many open source applications. Similarly, Android is an emerging technology that helps to address many problems in Smartphones and Tablets. The best way to run an Android application is through Eclipse Environment. An Eclipse is a platform through which the Android Stimulator can be run. Eclipse contain Software Development Kit (SDK) which is an editor. The application is being built for the worst case scenario (i.e) during the time of emergency. This will get the details from the users, who installs this application in their smartphones. The details like Name, Address, Mobile No, E-mail ID and the Blood Group of the concerned user is entered and stored in internal databases.

The user also has to enter E-contact (Emergency Contact) person’s Name and Mobile No. This application comes with the feature of editing the contact list through settings option. The application will display the page that contain the buttons of number of icons that hold the image. When an emergency contact button is pressed, the call is made from current user’s number to the number present in E-contact name. Similarly, this application will sent a message containing that a person needs blood of particular type to multiple person in network. Also, this application has the feature such as detecting various important landmarks such as Police-station, Fire-department, hospitals and the ambulance service that are within the range of “2km” in the surroundings of smartphone holding the user application. This is achieved with the help of Google Maps. This is intended to run in smartphones rather than in stimulator.

The remaining section organised as follows. The section 2 reviews some existing work. The section 3 reviews architecture work and its information. The section 4 reviews implementation results of the project. The paper concludes in section 5 with conclusion and future work.

II. RELATED WORKS

A. 24 hours GPS tracking in android operating system:

The GPS tracking in Android Operating system, provides a Smartphone-based autonomous management of Location. The application developing a location aware are application for Android, one can utilize GPS and Android's Network Location Provider to acquire the user location. The Android's Network Location Provider determines user location using cell tower and Wi-Fi signals, thus providing a location information so that the works indoors and outdoors, responds faster, and uses less amount of battery power. To obtain the user location one can use both GPS and the Network Location Provider, or just one. In this paper one could track the positions of the Android Device constantly for 24hrs and save them on a well secured web page, So that if a device is found to be in a prohibited area it can be easily traced out. The application is very useful for the military purposes. It can also help to create a daily log of device each and every location visited by the device in a day.

B. location based services using android (LBSOID):

At the initial stage, the mobile phones were developed only for the purpose of voice communication. The scenario has been changed voice communication is just one aspect for a mobile phone. There are other aspects which may focus the major interest. Two such major factors are web browser and GPS services. Both of these functionalities have already been implemented but it lies in the hands of manufacturers but not in the hands of users. The system does not allow the user to access the mobile hardware directly. After that the release of android based open source in the mobile phone the user can access the hardware directly and design customized native applications to develop the Web and GPS enabled services that may program the other hardware components like camera etc.

III. ARCHITECTURE DESIGN

The system architecture diagram gives the brief description about the various classes and resources being deployed in the form AndroidManifest.xml. The execution environment is the android SDK which helps to run the source code by running the AndroidManifest.xml.

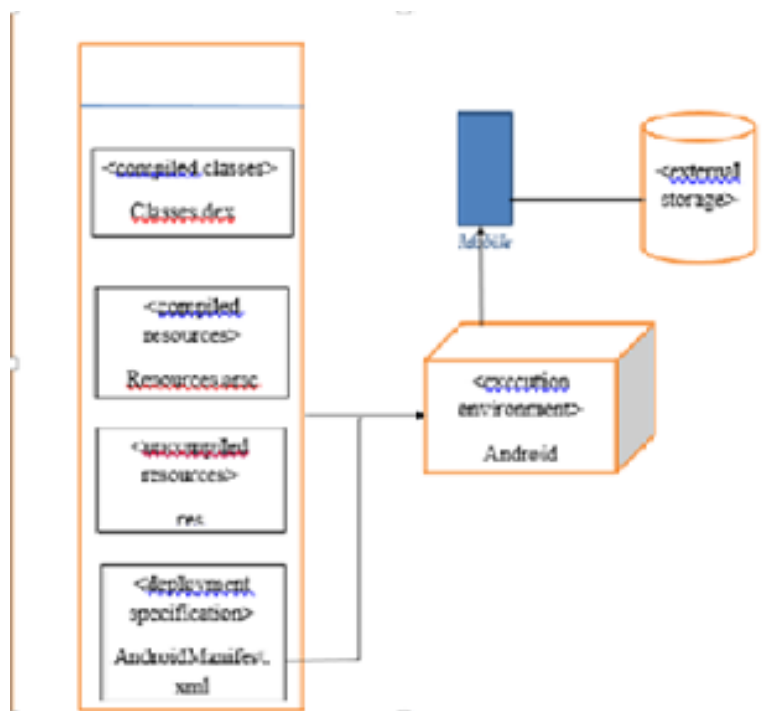


Figure:3.1 Represents the system architecture for social community

The external storage is built within the mobile will take care of storage. The execution environment is normally a mobile device which is present at the user end.

IV. IMPLEMENTATION AND RESULT

A. Vector based map-matching:

It is the process of aligning a sequence of observed user positions with the road network on a digital map. The application were used in many industries such as moving object management, traffic flow analysis and driving directions. The number of map matching algorithms have been developed by the researchers around world using different techniques. The topological analysis of spatial road network data the probabilistic theory, kalman filte, fuzzy logic and belief theory. In the proposed work implemented the heuristic map-matching algorithm by using vector based.

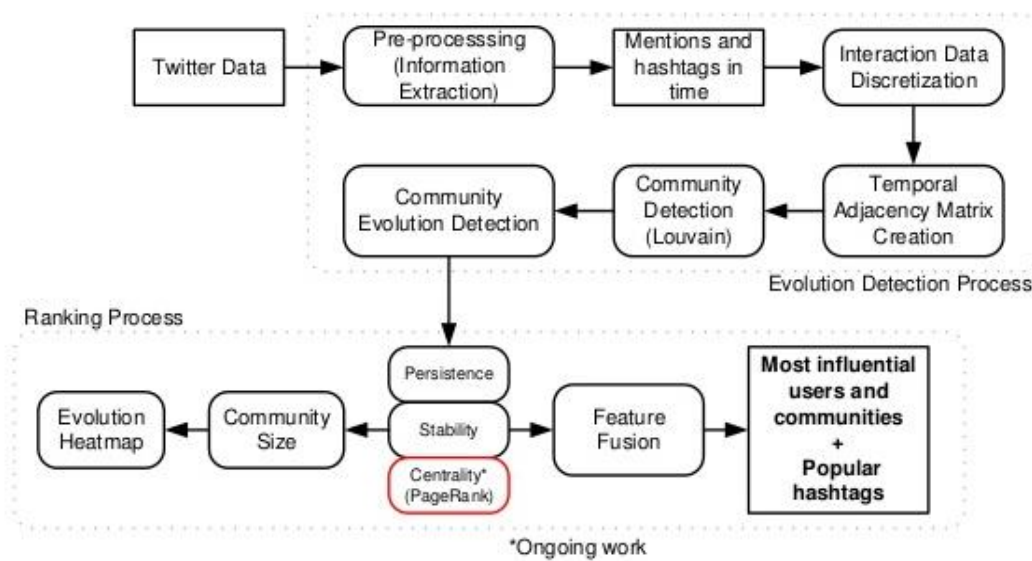


Figure 4.1 Represents the ranking process of social network

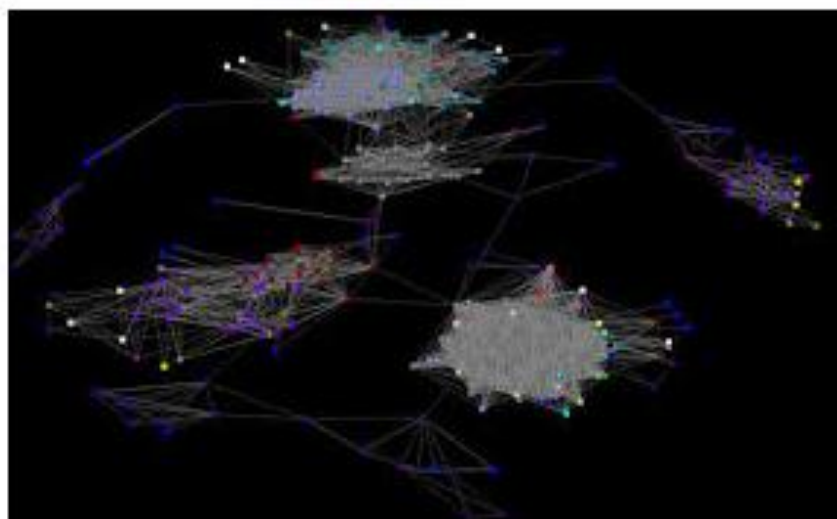


Figure:4.2 Represents the connecting the people from various location

B. Map-Matching Algorithm:

The input is series of GPS tracking data on some vehicle in some time. Lets mark it with $G = \{g[1],g[2],...g[n]\}$. The GPS data consists of the latitude and longitude co-ordinates while vehicle traveling direction and the time-stamp of GPS sampling. So $g[i] = (X_i, Y_i, V_i, T_i)$ where X is longitude, Y is latitude, V is travelling direction and T is Time-stamp. The Haversine formula to calculate the distance between two GPS co-ordinates.

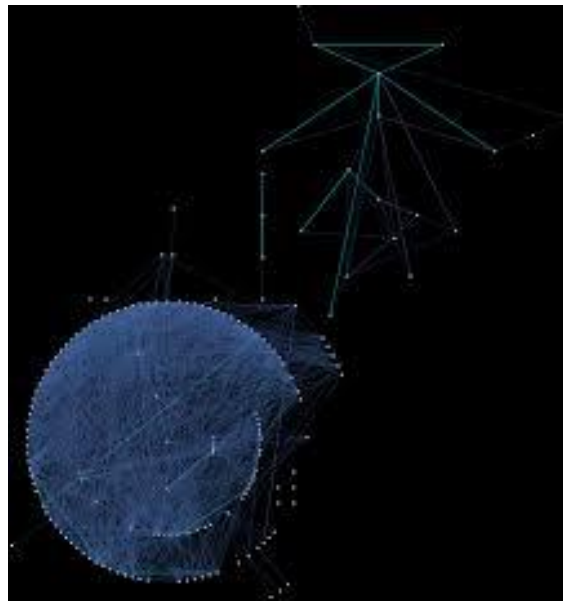


Figure 4.3 Represents the cluster formation of network data

Haversine Formula:

$$a = \sin^2\left(\frac{\Delta\varphi}{2}\right) + \cos \varphi_1 \cos \varphi_2 \sin^2\left(\frac{\Delta\lambda}{2}\right)$$

$\cos \varphi_2$

$$\sin^2\left(\frac{\Delta\lambda}{2}\right) \text{ then } c = 2 \arcsin(\sqrt{a})$$

$d = R \cdot c$ where φ is latitude

λ is longitude

R is earth radius (mean radius=6372.8 km)



Figure 4.5 Represents the process of forming the similar datas together

Distance between two points: The distance between two points p_1 and p_2 is $\text{Distance}(p_1, p_2) = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$
 Where $p_1(x_1, y_1), p_2(x_2, y_2)$.

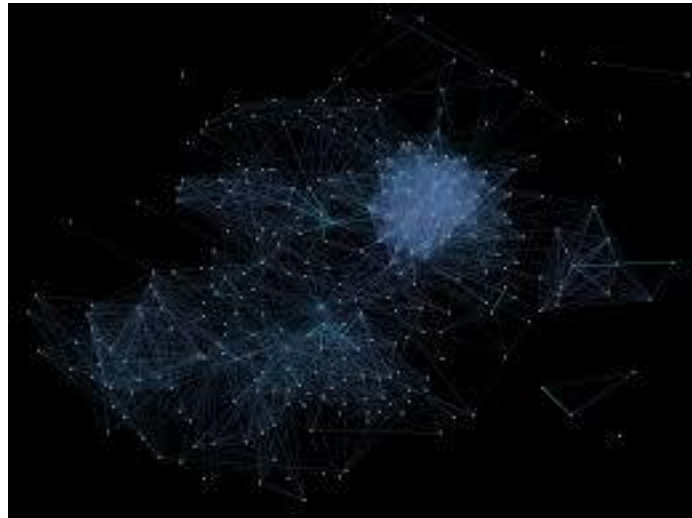


Figure 4.4 Represents the two or more cluster formation of datas from various location

V. CONCLUSION AND FUTURE WORK

The application provides a reliable and valid source of information that gives the details of all the Hospitals, Police Station, Fire Services and Ambulance facilities that are within the range of 2 km. In addition, to that application will make an emergency call at the time of emergency. The blood requirements can also be satisfied through messages.

The future work, lies in the improvements in android based E-contact app include getting the numbers dynamically based on the location in which the user is present. The application will try to make social networks possible by introducing chatting icon with the help of GPS that connects with people within particular range.

REFERENCES

- [1] Rasool.R, Sabarinathan, K, Suresh.M, Syed Salmon.H, Ragavan, March 2014, "24 hours GPS Tracking in Android Operating System," International Journal of Scientific and Research Publication, Vol 4, Issues 3.
- [2] Li Xu Dong, Tang Hai and Yan Gaoshi, 2010, "Android based wireless location and surrounding search system design," ninth international symposium on Distributed computing and applications to business engineering science, Hong Kong, pp.421-423.
- [3] Tor-Morten, Gronli Jarle, Hansen Gheorghita, Ghinea, 2010, "Android,Java ME and Windows Mobile interplay," IEEE 24th International Conference on Advanced information networking and applications workshop.
- [4] Fan Jiang and Saoping Ku, 200, "How to display the data from database by Listview on Android," second International workshop on Intelligent Systems and Applications (ISA).
- [5] Gupta.A.kumar,S.Qadeer,M.A,2009, "ocation based services using android(LBSOID)," IEEE International conference on Multimedia services architecture and applications, pp 1-5.