A Survey Paper for Provinance based position management employing primary position for mobile communication network

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ABSTRACT

The aim of project updating the provinance based location management strategy for mobile communication networks. In location management , a mobile terminal is tracked on its location update zone. The improvement is brought about by linkage upgrade of location zone center and location zone size. Using primary location this is proposed to find current updated location should take place based on its movement. This is to implement the optimal location zone center that minimizes the total cost of location management composed of the location update cost and terminal paging cost.

The main purpose behind this project are to reduce the cost and distance. There is typical application of proposed system is to track students at schools and universities, patients and doctor in hospitals. The system can be integrated to social networking sites. It can also be used to trace movements of customers in malls and to analyze their shopping patterns. This is proposed a model of an indoor location tracking system that uses the existing on campus Wi-Fi infrastructure and signal strength to determine a users location.

In this proposed system an android application will be developed that will enable a user to send information like available current location spot. After going through the surveying it can be gathered that there is a huge scope of application development in mobile domain. Application can be developed on android platform of open handset alliance led by google. Google provides simulated environment and standard development kit for developing android application.

Keyword :-*Lacation Tracking, Location Updating, Cost Analysis, Location Finding.*

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Introduction

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LBSs in Research:-

LBSs are often considered to be a special subset of *context-aware services* (from where the term *location-aware service* has its origin). Generally, context-aware services are defined to be services that automatically adapt their behavior to one or several parameters reflecting the context of a target. These parameters are termed *context information*. The set of potential context information is broadly categorized and, as depicted in Figure 2.1, may be subdivided into personal, technical, spatial, social, and physical contexts. It can be further classified as *primary* and *secondary contexts*. *Primary contexts* comprises any kind of raw data that can be selected from sensors, microphones, accelerometers, location sensors . This raw data may be refined by combination, deduction, or filtering in order to derive high-level context information, which is termed *secondary context* and is more appropriate for processing by a given *context-aware* service. As can be derived from Figure 2.1, LBSs are always context-aware services because location is one special case of context information. In many cases, the concept of primary and secondary contexts can also be applied to LBSs, for example, when location data from different targets are related or the history of location data is analyzed to obtain high-level information such as the distance between targets or their velocity and direction of motion. Therefore, there is no sharp distinction between LBSs and context-aware services. In many cases, context information that is relevant to a service, for example, information such as temperature, pollution, or audibility are closely related to the location of the target to be considered. Hence, its location must be obtained first before gathering other context information. In recent years, many location service protocols have been developed for Ad-hoc networks, including the Grid Location Service (GLS), the Simple Location Service (SLS), and the Legend Exchange and Augmentation Protocol (LEAP). In all of the existing location services, when a mobile node.s location is needed, the previously saved information in the location table is used.[Luo05] proposes the Prediction Location Service (PLS), a service in which a mobile node uses information about its previous state to predict its future state. Results show that PLS has lower overhead and lower location error than GLS, SLS, and LEAP.

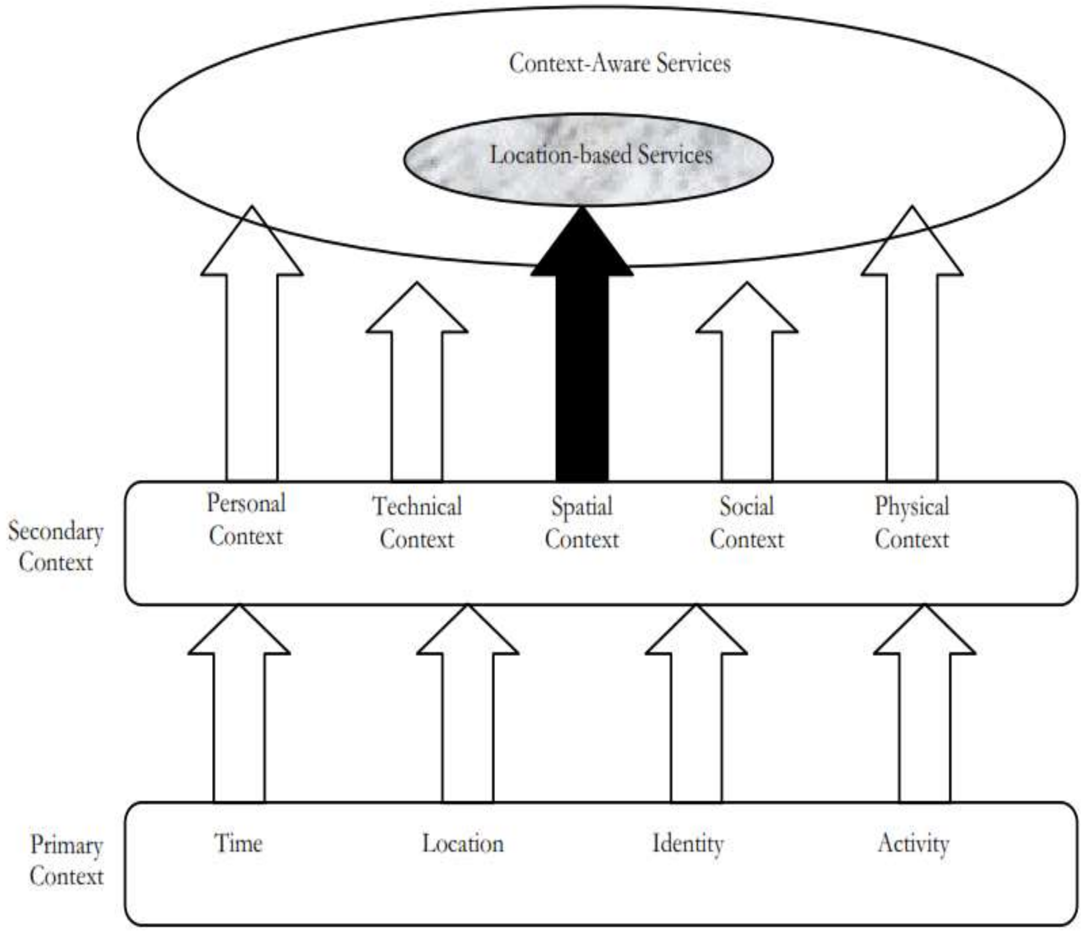
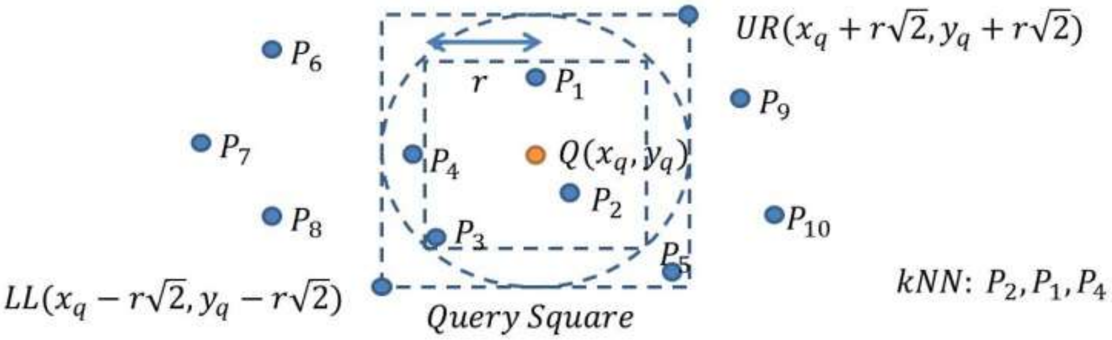


Fig.Architecture

k Nearest Neighbor Alogorithm:-

When there are n data points, the perpendicular bisector must be determined for every pair, for a total of (n(n□1))=2 bisectors. The encoded right-hand side and slope must be sent for each bisector from the data owner to the server, and the server needs to perform (n(n□1))=2 comparisons on encoded data to _nd the _rst nearest neighbor. Clearly, such cost is prohibitive. To reduce this overhead, we propose a basic k nearest neighbor scheme which uses the concept of query squares. We illustrate this concept in Figure : the small query square with side 2r corresponds to a range query selected by the user, whereas the large query square is computed as the smallest square that encloses the circle in which the small query square is inscribed. Suppose a user wishes to retrieve from the server the answer to a 3NN query (k = 3). Assume the small query square contains three data points and the large query square contains _ve data points. Note that, it is possible for a data point that is outside the query square (in our example P4) to be closer to the query point than some point inside the square (say P3). This means that if the small query square contains at least k data points, the large query square will certainly contain k nearest neighbors. If the small query square does not have at least k data points, then the client will generate a larger query square and re-issue the query, in a process similar to incremental range queries. The size Ssq of the small query square can be determined by the client according to the estimated number of data points in the data domain. For instance, when the number of data points is n and the size of the data space side is l, then assuming the data points are uniformly distributed, we have:

k : n = (2r)2 : l2 , Ssq = 2r =
p
kl2=n = l
p
k=n (4)



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LM consists mainly of:
1. Location Tracking and Updating (Registration): A process in which an end-point initiates a change in the Location Database according to its new location. This procedure allows the main system to keep track of a user.s location so that for example an incoming call could be forwarded to the intended mobile user when a call exists or maybe bring a user.s profile near to its current location so that it could provide a user with his/her subscribed services.
2. Location Finding (Paging): The process of which the network initiates a query for an endpoint .s location. This process is implemented by the system sending beacons to all cells so that one of the cells could locate the user. This might also result in an update to the location register.

The network is partitioned into a number of cells. For location management purposes, an LA consisting of a group of cells is defined as the tracking area of an MT.

Literature Survey

X. Wang, X. Lei, P. Fan, R. Q. Hu, and S. Horng, "Cost analysis of movement-based location management in PCS networks: An embedded Markov chain approach," IEEE Trans. Veh. Technol., vol. 63, no. 4, pp. 1886–1902, May 2014.

"On this paper, we improve an process of embedded Markov chain to research the signaling price of a movement-founded vicinity administration (MBLM) scheme. This technique distinguishes itself from these developed in the literature within the following points. 1) It considers the vicinity subject (LA) architecture utilized by personal communique service (PCS) networks for area administration. 2) It considers two different name dealing with items that verify after a name whether or not a region replace should be performed. 3) It considers the outcomes of the decision protecting time on the decision handling items. Four) It proposes to make use of a fluid waft model to describe the dependence between the cellphone and the LA residence time."

K. Li, "Analysis of cost and quality of service of time-based dynamic mobility management in wireless networks," Wireless Netw., vol. 20, no. 2, pp. 261–288, Feb. 2014.
"A key commentary of a time-based vicinity administration scheme (TBLMS) is that the easy paging method (i.E., the quickest paging system) does not guarantee to discover a cell terminal, regardless of how small the area update cycle is and how significant the radius of a paging field (PA) is. Hence, in addition to cost evaluation and optimization, there's one further issue to care for in a TBLMS, i.E., the fine of provider (QoS), which is the probability that a mobile terminal can also be located in the present PA."

R.M. Rodrıguez-Dagnino and H. Takagi, "Application of renewal theory to call handover counting and dynamic location manage- ment in cellular mobile networks," Eur. J. Oper. Res., vol. 204, no. 1, pp. 1–13, 2010.
"Mobility management in wireless cell networks is among the major problems for useful resource optimization. It's aimed to maintain monitor of cell Stations (MSs) in the exclusive place Areas (LAs) or Registration Areas (RAs) for an effective call delivery. The optimization issues of these vicinity approaches seem for a minimization of the generated signaling traffic. We describe the three common procedures for vicinity management: distance-established, time-centered and movement-established, and their corresponding optimization fee."

R. H. Liou and Y. B. Lin, "Mobility management with the central- based location area policy," Comput. Netw., vol. 57, no. 4, pp. 847– 857, Mar. 2013.
"This paper investigates the performance of the primary-centered LTE mobility administration scheme, and compares this scheme with the earlier proposed crucialituated mobility management schemes: the action-situated and the gap-established schemes. Our be trained shows that under some visitors/mobility patterns, the LTE scheme yields the great performance."

H. Fu, P. Lin, H. Yue, G. Huang, and C. Lee, "Group mobility man- agement for large-scale machine-to-machine mobile networking," IEEE Trans. Veh. Technol., vol. 63, no. 3, pp. 1296–1305, Mar. 2014.
"On this paper, we endorse a group mobility administration (GMM) mechanism the place machines are grouped situated on the similarity of their mobility patterns on the place database (LDB), and handiest the chief computing device performs mobility administration on behalf of the opposite machines in the same crew. The GMM mechanism attempts to mitigate the signaling congestion quandary. Via our performance be taught, we exhibit how the GMM mechanism can scale back registration signaling from machines"

Conclusion

. LM is a key factor for wireless mobile networks. Without a good strategy for LM, mobile communication and computing cannot exist. Location Based Services are services that integrate a mobile devices location or position with other information so as to provide added value to a user. LBS are classified as Reactive and Proactive. Applications of LBS are classified as military and government industries, emergency services, and the commercial sector.

LM functions such as location updating and paging have to fulfill services and the requirements of users and operators. One of these requirements is cost efficiency, which could be reached by minimizing the signaling traffic both on radio links and on fixed network links. What we aim for is a LM scheme that will provide efficient searches and updates transparent to the user.

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