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An Efficient Communication Topology using Societal Computing

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ABSTRACT

In the era of mobile development, Social computing technology has reached the next form of getting collaborated. We study a new type of K-Cover Group (KCG) queries that, given a set of query points and giving boundary towards the exploration of view from various users. The idea of collaborative social computing has been widely used in various domains, including location-based social networks (LBSNs), Geo-crowdsourcing, activity planning, group decision making, and disaster rescue. One of the most important applications of collaborative social computing in the database field is social queries, which are attracting increasing interest from both industrial and academic communities. The proposed social queries which take as inputs a set of query location point and certain social acquaintance constraint and return a set of users with minimum location distance while satisfying the social constraint. We formally define a KCG query to capture natural requirements driven by the real-life applications. For the social factor, instead of finding a group whose associated regions jointly cover a set of query points? Here we quantify the desire social relationship within a user group in terms of k-core. And also we propose a novel index structure, known as the Enhanced SaR-tree. It is easy to extend our algorithm to support the case where each user has multiple associated regions. The following branch and bounding process remains the same as the case where each user has exactly one associated region.

Keywords: K-cover group queries (KCG) Queries, Geo-Crowd Sourcing, K-Core, Constraint.

I. INTRODUCTION

Social computing can be helpful to create and empower the employees within an organization and it also creates benefit for the business. It is an interactive aspect of online behavior. In contrast, personal computing describes the behavior of isolated users. The project idea that is currently being formulated in the detection and identification of groups is about the plans. Throughout the world, the social networks share reviews and information between the isolated users. But, we have proposed a concept of exchanging information that gives priority thereby addressing and solving the issues within the location we prefer. The scope of this project is after registering into the application, to detect or identify groups based on the location and the social networks and sharing reviews or sharing the information within the group members about the location and issues which happened in the particular location.

II. METHODS AND MATERIAL

1. Related Works

A. Geo-Social Query Processing

The proliferation of GPS-enabled mobile devises and the popularity of social networking have recently led to the rapid growth of Geo- Social Networks (GeoSNs). GeoSNs have created a fertile ground for novel location-based social interactions and advertising. These can be facilitated by GeoSN queries, which extract useful information combining both the social relationships and the current location of the users. This paper constitutes the first systematic work on GeoSN query processing. We propose a general framework that offers flexible data management and algorithmic design. Our architecture segregates the social, geographical and query processing modules. Each GeoSN query is processed via a transparent combination of primitive queries issued to the social and geographical modules.

We demonstrate the power of our framework by introducing several “basic” and “advanced” query types, and devising various solutions for each type. Finally, we perform an exhaustive experimental evaluation with real and synthetic datasets, based on realistic implementations with both commercial software (such as Mongo DB) and state-of-the-art research methods. Our results confirm the viability of our framework in typical large-scale GeoSNs.

B. Decomposition Of Networks

The structure of large networks can be revealed by partitioning them to smaller parts which are easy to handle. One of such decomposition is based on k-cores proposed in 1983 by Seidman. In the paper an efficient, o(m), where m is the number of lines, algorithm for determining the cores decomposition of a given simple network is presented. An application on the author’s collaboration network in computational geometry is presented.

C. Vertex Cover Approach

We propose a novel disk-based index for processing single-source shortest path or distance queries. The index is useful in a wide range of important applications (e.g., network analysis, routing planning, etc.). Our index is a tree-structured index constructed based on the concept of vertex cover. We propose an I/O-efficient algorithm to construct the index when the input graph is too large to fit in main memory. We give detailed analysis of I/O and CPU complexity for both index construction and query processing, and verify the efficiency of our index for query processing in massive real-world graphs.

D. Bridging Of Social Networks And Spatial Networks

Recording the location of people using location-acquisition technologies, such as GPS, allows generating life patterns, which associate people to places they frequently visit. Considering life patterns as edges that connect users of a social network to geographical entities on a spatial network, enriches the social network, providing an integrated socio-spatial graph. Queries over such graph extract information on users, in correspondence with their location history, and extract information on geographical entities in correspondence with users who frequently visit these entities.

In this paper we present the concept of a socio-spatial graph that is based on life patterns, where users are connected to geographical entities using life-pattern edges. We provide a set of operators that form a query language suitable for the integrated data. We consider two implementations of a socio-spatial graph storage one implementation uses a relational database system as the underline data storage, and the other employs a graph database system. The two implementations are compared, experimentally, for various queries and data. An important contribution of this work is in illustrating the usefulness and the feasibility of maintaining and querying integrated socio-spatial graphs.

E. Distance Browsing In Spatial Databases

Two different techniques of browsing through a collection of spatial objects stored in an R-tree spatial data structure on the basis of their distances from an arbitrary spatial query object are compared. The conventional approach is one that makes use of a k-nearest neighbor algorithm where k is known prior to the invocation of the algorithm. Thus if m>k neighbors are needed, the k-nearest neighbor algorithm needs to be re invoked for m neighbors, thereby possibly performing some redundant computations. The second approach is incremental in the sense that having obtained the k nearest neighbors, the k+1st neighbor can be obtained without having to calculate the k+1 nearest neighbors from scratch. The incremental approach finds use when processing complex queries where one of the conditions involves spatial proximity (e.g., the nearest city to Chicago with population greater than a million), in which case a query engine can make use of a pipelined strategy. A general incremental nearest neighbor algorithm is presented that is applicable to a large class of hierarchical spatial data structures. This algorithm is adapted to the R-tree and its performance is compared to an existing k-nearest neighbor algorithm for R-trees .

Experiments show that the incremental nearest neighbor algorithm significantly outperforms the k-nearest neighbor algorithm for distance browsing queries in a spatial database that uses the R-tree as a spatial index. Moreover, the incremental nearest neighbor algorithm also usually outperforms the k-nearest neighbor algorithm when applied to the k -nearest neighbor problem for the R-tree, although the improvement is not nearly as large as for distance browsing queries. In fact, we prove informally that, at any step in its execution, the incremental nearest neighbor algorithm is optimal with respect to the spatial data structure that is employed. Furthermore, based on some simplifying assumptions, we prove that in two dimensions, the number of distance computations and leaf nodes accesses made by the algorithm for finding k neighbours is O(k + pk).

2. Existing System

In Existing system, the Social graph is un weighted, and here we can't get exact solution. Even though, while creating the group based on location or social network, it will be created approximated only. In this system, the partial results may not identify all the profiles that correspond to the user group. Demerits of the existing system are though it is the single user system it won't have the collaboration with social networks. The main problem of this system is sharing reviews or sharing the information within the group members is not efficient. We cannot organize the user chat according to the names of the persons. The time consumption has not been maintaining here.

3. Proposed System

To overcome the disadvantages in the existing system, we have proposed a weighted Social graph so that we can get exact solution while creating the group based location on social network. The proposed system can be used to improve an efficient approximation bound as it serves user's needs in a consistent and transparent manner and it caters the needs of information sharing. The main objective of this system is to detect or identify groups based on the location and the social networks and sharing reviews or sharing the information within the group members. It allows the users to exchange their reviews in efficient manner to reduce accident risks and it helps to protect the conversations of relatively tight social relations in order to make their chat more trustful and more harmonious. It has all traditional things such as chat, comment, etc. Most importantly, the admin has the whole rights to remove the users from the database registry. In this system the users can view the conversation by name wise for the need of an effective maintenance of the time consumption process.

III. RESULT AND DISCUSSION

1. Experimental Work

A. Authentication Management

The authentication part consists of two phases : registration and login. The registration of user is mandatory to create the account. Only after the registration, the user can able to access the system. If an user wishes to register they are supposed to create an account which includes Name, User Name, Password, Gender, Email ID, Location, Mobile Number, Social network from users. Here, in this project, the registration process is only for the users and it is not necessary for the admin. If the user fails to enter their details, while submitting the form, the validation takes place over the registration. Once the validation is completed without any corrections, the user can be allowed to move on to login phase.

Admin and user panels have individual login type. If there is a problem in login, a start over registration is allowed in the registration form. If the username and password is incorrect or unregistered, the user and admin can't able to access this system. Based on the type of login the access control will be differing.

B. User Interaction

The user has the rights to post image, to chat, to comment, and to raise a query. Once the login phase is over, the user can be directed to news feed page. Here, the users can post their images. It will be visible to all the users who all are in the group. Whereas if he/she wishes to chat, they can share their reviews and the information within the group members about the location and issues which happened in the particular location and the users can be allocated automatically in the group which is created by the admin. The group is based on the input named social network which is getting from the user while registration. The user is also allowed to comment on a page so that they can send their reviews to the particular photo which is uploaded by the admin. The sent comment will be displayed like a table which will be visible to the users who all are in the group. Through this, the user can interact with the admin. If the user has any queries he/she can raise it to the admin.

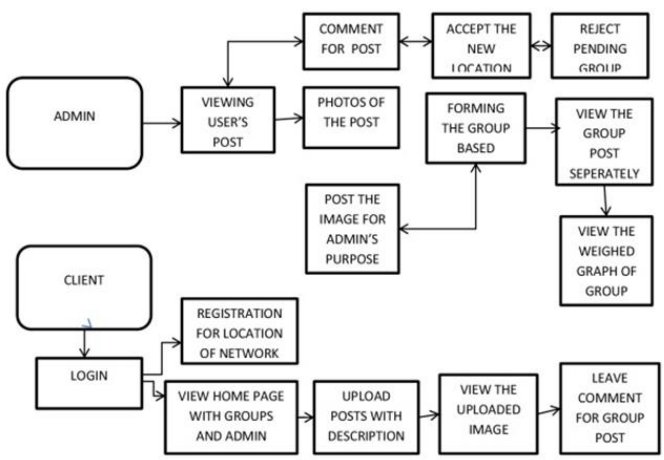
C. Admin's Specialization

The admin has the power to upload image, to manage group, to view user queries and details. After login phase, the admin uploads the image which will be visible to all the users in the group and the user can also send their comments to that image. Based on the input i.e., the details provided by the user in the registration phase, the admin has a speciality to manage the group effectively. In user's point of view, the admin always remains user-friendly as he not only views the user queries but also renders solutions to their queries and the registration details can also be viewed by the admin.

D. Algorithm Study

To satisfy the minimum cardinality requirement of KCG query, it is necessary to process the user groups in increasing order of group size and return the current group as soon as it is valid. It is to find the relationship between the users and their locations whereas social aware based R-tree algorithm is used to index both spatial locations and social relations and also it is used to find the optimal solution.

2. Architecture Diagram



IV. CONCLUSION

Here we implemented data integration with the combination of social and location data from different sources. As we insisted the implementation of Geo social collaboration is the task of identifying the groups and sharing information across different entity profiles. In this paper, we implement the Geo Social collaboration using spatial Computing. The splitting of user profiles by their name implies reducing duplication. In this system we enhance some features like we can able to chat with the users and can see others comments in the user part. Admin has privilege to delete that user account.

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