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A Query Based Algorithm For Optimal Location Search

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***Abstract*:** Inspired by the increasing popularity of Mobile computing, services based on location and with the availability of digital maps, the spatial keyword search has attained wide attention. In spatial databases the association of objects is done with keywords. The purpose is to find a number of independent objects, in which every object is nearer to the location of query and the keywords associated are related to the collection of query keywords. The associated keyword similarity is applied to measure the relation among two collected keywords. The concept of keyword cover, covers all associated query keywords which are closer to each other. This approach is known as m Closest Keywords (mCK) query. The objective is to explore a general form, known as Best Keyword Cover (BKC) query, which along with interobject distance also considers ratings of keyword, which enhances the decision making process. In BKC query processing, two algorithms are used: Baseline and Keyword Nearest Neighbor Expansion(KNNE). The baseline algorithm is derived from mCK query processing. The working of the baseline algorithm decreases drastically because of vast keyword covers generated. To overcome this drawback, a more extensible algorithm KNNE is used. This algorithm reduces the number of keyword covers produced.

Keywords: Spatial Database, Points of interest, Keywords rating, Keyword cover, Candidate Keyword

1. INTRODUCTION

Driven by versatile registering, area based administrations and wide accessibility of broad computerized maps and satellite symbolism (e.g., Google Maps and Microsoft Virtual Earth benefits), the spatial pivotal words look issue has pulled in much consideration as of late. In a spatial database, each tuple speaks to a spatial article which is connected with keyword(s) for demonstration of data, for example, its organizations administrations highlights.Given an arrangement of inquiry decisive words, a vital undertaking of spatial keywords look is to distinguish spatial object(s) which are connected with pivotal words important to an arrangement of question essential words, and have attractive spatial connections (e.g., near one another and/or near a question area). This issue has one of a kind quality in different applications in light of the fact that clients' necessities are regularly communicated as various decisive words [1]. For instance, a vacationer who arrangements to visit a city may have specific shopping, eating and settlement needs. It is alluring that everything these needs can be fulfilled without long distance traveling.Because of the exceptional worth by and by, a few variations of spatial pivotal word seek issue have been examined. The works plan to locate various individual questions, each of which is near an inquiry area and the related decisive words (or called archive) are exceptionally significant to an arrangement of question essential words (or called inquiry record). The archive closeness is connected to gauge the importance between two arrangements of keywords. Since it is likely none of individual articles is connected with all inquiry decisive words, this persuades the studies to recover various items, called essential word spread, which together cover (i.e., connected with) all question catchphrases and are near one another. This issue is known as m-Closest Keywords (mCK) question in. The issue concentrated on in moreover obliges the recovered protests near an inquiry area. We are designing a system that facilitates the process of locating places having minimum inter-object distance and maximum rating [6]. In other words, we want to make it easier to locate for places as a group.Inspired by the increasing popularity of Mobile Computing , and services based on location and with the availability of digital maps, the spatial keyword search has attained wide attention. In spatial databases the association of objects is done with keywords. Nowadays , we are noticing the growing availability and significance of rating keywords in evaluation of object which helps in better decision making [8].This inspires us to look

into a generic form of Closest Keyword search called Best Keyword Cover which along with inter-object distance also considers the Keyword rating.

2. APPLICATIONS

Before explaining the elements of the framework, we briefly describe the various applications that can be occupied in the framework. The class of applications that take as input spatial keyword queries, processes them and output sources of information that are relevant to the queries are the geographic information retrieval applications [7]. We are able to locate the places having minimum inter-object distance and maximum ratings. Users requesting for the location of the nearest business or service, such as an ATM, restaurant or a retail store can be retrieved efficiently. The user can use the system to reach any address by specifying it in the query.

3. RELATED WORK

Suggestion of keyword is one of the vital characteristic for various search engines. In which, the user submits the keyword to the search engine which then suggests number of keyword query in order to refine the search. But, here the user may not be satisfied with the outcomes, therefore effective methods of keyword suggestion can be used which are based on information obtained from the query logs [10], [11], [12]. New keywords can be recommended on the basis of relation to the main keyword query. The methods which are existing do not provide location - based query suggestion, in which is the keyword suggested, along with the requirement of the user also considers the location of the user and then provides the asked document. The requirement is due to the increased need of spatial keyword search. In 2011, Google processed average of 4.7 billion per day, having huge share of spatial web objects that is the point of interest having web for locations along with their text description or geo -document, the documents related to the geometric locations. Related work on the location – based query suggestion is, the Location – aware Keyword Query suggestion (LKS) framework. In LKS framework, it retrieves keyword that is related to the provided needs of the user information along with retrieving the document that is near to the user location. And hence, it differs from other keyword – aware recommendation methods [9].

The retrieval of geographic information has a way of representing thematic and geographic knowledge within queries. Thematic information is managed by information retrieval method such as keyword matching and geographic information is given by names of places. The place names are then converted to be stored in the spatial database as geometric co-ordinates. Then the likeliness among the queries is calculated by Euclidean distance or the areas which have overlapping geographic impressions [13].

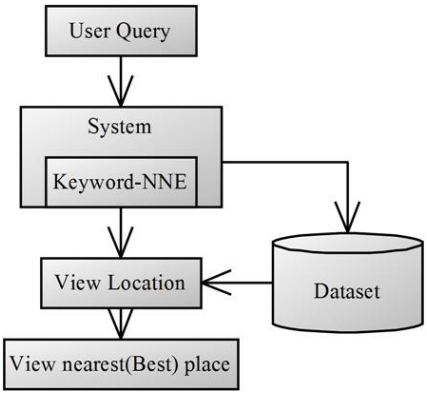
A direction aware spatial keyword search technique, first considers a collection of Points of Interest (POIs) where every POI is linked with spatial information and textual representation. When a direction aware spatial keyword query is given with a location, direction and a set of keywords, the direction-aware search locates the k nearest neighbors of the query which are in the direction of the search and accommodates all the keywords in the input [14].

The existing geo-textual objects help the users receive up-to-date objects whose locations have a spatial overlap with the region specified by the user and the texts consist of the keywords specified by the user. In systems like these, both the keyword specified by user and the spatial region in a query perform as filters. But such a system has a few problems: 1.The user may receive very few matching geo-textual objects or may receive a huge number of matching objects, which depends on the query region or keywords specified. 2. Specifying the size of spatial region and the query keywords when they are used as filters. To overcome these problems, the ranking-ordering of the geo-textual objects is done which returns only the top-ranked objects[4].

Spatial keyword query is a query that specify both location and keyword set. In spatial keyword query, query keywords are ranked according to their distance from a specified location[2]. For solving a spatial keyword queries an algorithm used spatial keyword search and information retrieval (IR), for that purpose information retrieval (IR^2-Tree), which structure is based on R-Tree is used. Storing spatial and textual information IR^2-Tree proposed as an efficient indexing structure .IR^2-Tree is nothing but combination of signature file and R-tree ,each node of IR^2-Tree contain spatial and keyword information[5].

4. FRAMEWORK OVERVIEW

The framework will explain the function and features of the system, the requirements of the system, how the system will perform, the constraints under which it must work and how the system will react in different cases. This document is intended for both the developers and the stakeholders. The system retrieves location from dataset, then the system provides location with maximum ratings and minimum inter object distance.



Initially, a query is entered by user which is given to the system. System consists of a spatial database and uses the Keyword- Nearest Neighbour Expansion algorithm. K-NNE algorithm finds a number of independent objects, in which every object is nearer to the location of query and the keywords associated are related to the collection of query keywords [3][5]. An output which represents the information distinctly and meets the end user demands is efficient. The results of processing are conveyed to the users and to other system through outputs, in every system An efficient and smart output plan helps in improving the user's relationship with the system which further helps in better decision-making.

5. CONCLUSION

Main objective is to find the best location with maximum rating and minimum inter object distance. The baseline algorithm is motivated by the techniques of Closest Keywords search which is derived by exhaustively bringing together objects from various query keywords to generate candidate keyword covers. When the number of query keywords increases, the working of the baseline algorithm decreases drastically as a result of massive candidate keyword covers generated. To attack this drawback, much more scalable algorithm called keyword nearest neighbour expansion (keyword-NNE) is used. On comparing with the baseline algorithm, keyword-NNE algorithm significantly reduces the number of candidate keyword covers generated.

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