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A SPATIAL APPROXIMATE STRING QUERIES TO SOLOVE ISSUSES IN CARPOOL SERVICES USING MHR-TREE IN CLOUD

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***Abstract*— The continuous population and economic growth has caused an massive increase in the number of private cars in cities worldwide. Carpooling is the sharing of car journeys so that more than one person travels in a car. Carpooling reduce each person's travel costs such as fuel costs, tolls, and the stress of driving. In a city area there are different option are available for public transportation but there are the disadvantage of comfort level. In this paper, we have presented an advanced carpooling system and described it in detail. This system can also be said as Intelligent Carpool System (ICS), which will give the carpooling participants to use the carpool services using simple handled smart devices anywhere and at any time. .It is significant to develop algorithmic methods for optimally matching drivers and passengers on the service agency of the ICS system. To give system users the opportunity to obtain carpool matches anyplace and at any time, drivers and passengers similar can use the MC module to execute carpool operations (e.g., requesting and offering ride) via their mobile devices. MHR tree, for efficiently answering approximate string match query in large spatial databases.**

Index Terms— ***Intelligent carpool service(ICS),Mobile Clients (MC) .***

I. INTRODUCTION

The main aim of carpooling is to provide an effective solution to a traffic congestion problem by allocate their vehicle with one or more drivers whose destinations are identical. It helps environment by decreasing the rate of vacant seats by increasing the rate of occupation. There are a small number of of carpooling systems which are already present in the World but they are web based and simply have choice to send a request option for a specific date and time and give a exact result. Some of the carpool use the aspect of several systems feature a digital GIS mapping facility by which to provide a visual tool with exact location information to users. Unfortunately, these systems are neither efficient nor suitable for users who want real-time carpool matches and no security present. So we are propose an intelligent carpool system which gives proper algorithm using MHR-Tree.

Drivers and passengers can immediately access real time carpool service via the structure of ICS, with their current location and other necessary information input by their smart phone or other devices. The mobile computing module is used to perform carpool operations (e.g, requesting and offering rides) via their mobile devices.

II. RELATED WORKS

Smartphone technology enables dynamic ride-sharing systems that bring together people with similar itinerary and time schedules to share rides on short-notice. Increasing the number of travelers per vehicle trip by effective usage of empty car seats by ride-sharing may of course enhance the efficiency of private transportation, and contribute to reducing traffic congestion, fuel consumption, and pollution. Moreover, ride-sharing allows users to share car-related expenses such as fuel costs. The simulation results suggest that dynamic ride-sharing may represent a useful option to reduce system-wide vehicle miles, reduce trips and save travel costs, even when participation rates are relatively small [1]. A ride-share provider, either private or public, helps people to establish ride-shares on short-notice by automatically matching up drivers and riders. The objectives of the ride-share provider and ride-share users are aligned because both the total travel costs of the users and the external costs to society relate to the total system-wide vehicle-mile[2].

III. PROPOSED SYSTEM ARCHITECTURE

This paper presents a novel index structure, MHR tree, for professionally answering approximate string match query in large spatial database. The MHR-tree is based on the R-tree increased with the min-wise signature and the linear hashing technique. For a range query r, start from the root and check the MBR of each of its children, then recursively visit any node u whose minimum bounding rectangle (MBR) intersects or falls inside r. When a leaf node is reached, all the points that are inside r are return. R*-trees achieve better performance in general than the original R-trees. This is general view of MHR tree. MHR tree is created using whole dataset given for searching and arranged depending on their ranges. For searching it takes leaves keywords and then search within them (keywords). Here we are using hashing for searching the keywords. For each source passed same key and whenever we give any keyword query then flag values (number of times keywords find out) along with their key values get displayed. Introduces a new index for answering ESAS queries powerfully which embeds min-wise signatures of q-grams from sub trees into the R-tree nodes. The RSASSOL method separates the road network, adaptively search relevant sub graph, and prune candidate points using both the string identical index and the spatial reference nodes. By using the MHR-Tree is able to find the optimum carpool route and matching results both accurately and promptly in accordance with the optimization of all objectives[13]

IV. OBJECTIVES OF PROPOSED SYSTEM

- MHR tree uses hashing techniques and min-wise signatures.
- As MHR tree data is arranged in tree form before giving any query and after we give any query then we get hash code related to keywords as hashing techniques are used.
- Using these hash code we find out related result to given query.
- In tree it is easy to add branch or remove.
- So pruning is easy in MHR tree as compared to routing plans.

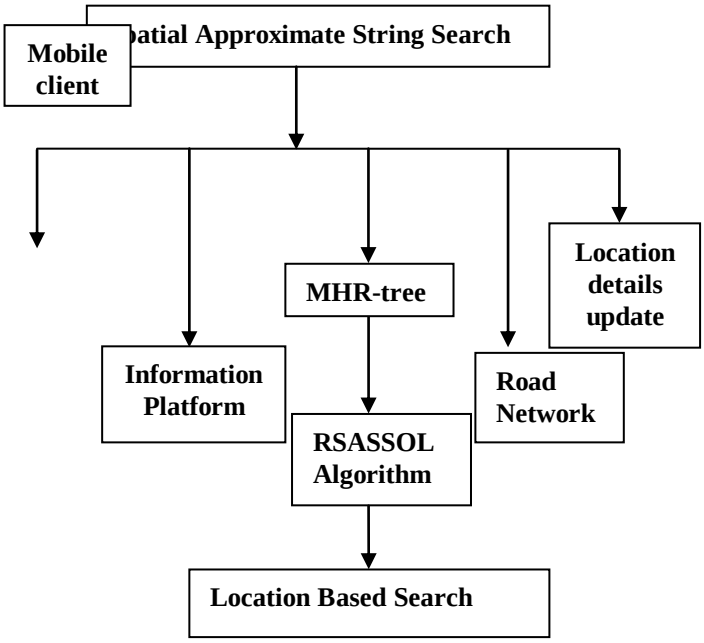

Fig1. System Architecture

A. Mobile Client

The MC module is a mobile application built on sophisticated mobile operating system such as iOS, Android, Windows Phone, and so on. It features an included GPS receiver and capability for mobile communication. Because of this, users can obtain details about their present locations by automatically accessing the GPS signals of satellites and can also retrieve geo resource map images over the Web Map Service (WMS) application programming interface (API) to exactly pinpoint their pickup and destination location. Using the MC module, users can both offer carpool ride as drivers and send carpool requests as passenger. When drivers and passenger are in the same regional range, a group of users' offers and requests will help them find proper carpool partners[14].

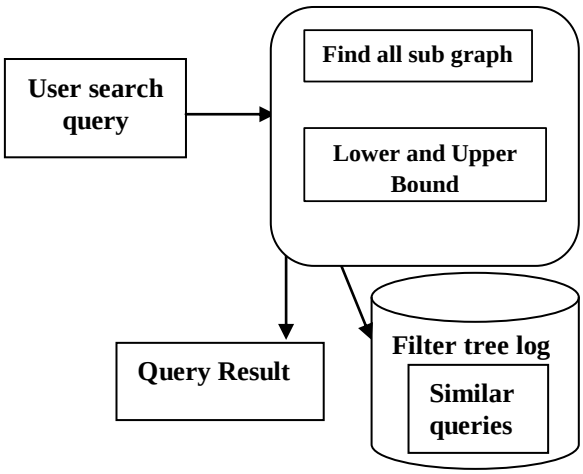

Fig 2. RSASSOL Algorrithm

B. RSASSOL Algorithm

The RSASSOL algorithm is presented as follow

- Get the queries for string search.
- Discovering the sub graphs for the given queries.
- Filter tree approach is used as sub-graph that display and output the similarity points of the actual queries string.
- Lower and upper bound of candidate points is calculated and it is pruned from the distance of the candidates
- The above step 4 is repeated until the string predicate is estimated
- The accurate distance for every candidate points to the query points that returns the optimal distances for the specified query string.[3]

C. Location Based Search

The location based search is based on the distance between a user specified location and locations that are based on the maps available in the web. The passenger can give the latitude & longitude details that location also viewed by map.

D. Road Network

The road network shows the shortest path for the carpool passenger to reach their destination place. The exact time to reach their destination place is also display when they selected the road network.

E. Location Details Update

The carpool passenger and drivers each queires are and their current location details are updated in to the database .

V. SYSTEM MODELS

The System model consists of Information Platform, Information retrieval, Mutual Selection..

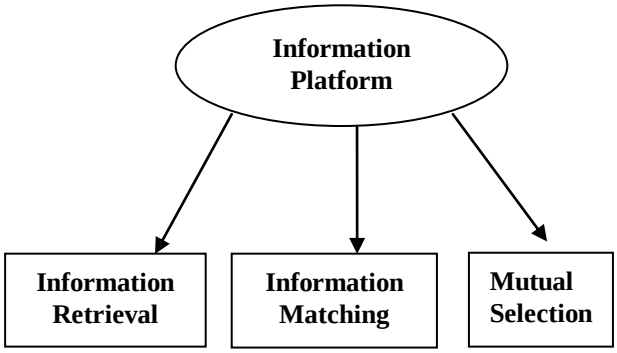

Fig 3. System Model

A. INFORMATION RETRIEVAL.

Drivers contact the information platform, release carpooling information such as vehicle running time and route, and query the passenger details. Passengers login the system, submit carpooling applications, namely journey time, location, and routes information, and verify the driver information.

B. INFORMATION MATCHING

The information system summarize drivers' time, routes information, and passengers' carpooling require information and match them reasonably. Then the matching result will be feed back to both sides in time so as to complete the next step.

C. MUTUAL SELECTION

Drivers (passengers) choose passengers (drivers) according to their own requirements and the initial matching details; if they select each other, then the matching will be successful. Otherwise, the system will maintain matching details. The carpooling information will be processed by the platform once released by both sides. The system will send the matching details to drivers and passengers for mutual selection. Passengers judge the driver's driving skill and the vehicle condition. Drivers check the number of passengers, the working place, and time. If fulfilling mutual selection cannot be reach, the system will match information again until both sides are satisfy with the matching results so as to understand the humanized carpooling and improve the carpooling efficiency.

VI. ADVANTAGES OF PROPOSED SYSTEM

Our proposed system combines mobile communication technology with GIS to create a carpool service which is operable in real time. As a result, users can instantly submit carpool requests to the intelligent carpool system which reveal their current locations via the practice of smart, handheld, communication devices which has element of GPS capabilities. The system will use the carpool corresponding algorithm to generate and return match results within a short period of time.

VII. CONCLUSION

Our proposed system combines mobile communication technology with GIS to create a carpool service which is operable in real time. As a result, users can instantly submit carpool requests to the intelligent carpool system which reveal their current locations via the practice of smart, handheld, communication devices

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