An Efficient Search of Imperceivable data in Location-based Services

Sumallika P[1], Aditya Nudurupati[2], Prathyusha Yejarla[3], Deepika Vaddi[4],
[1]Assistant Professor, [2,3,4]B.Tech Computer, Students
[1,2,3,4] CSE, LIET, Vizianagaram, India

Abstract— **Location-based Services has been utilized in order to obtain the nearest services within the specified region. But there's one drawback i.e., the data regarding some services has not been retrieved such as internal services of the main service. To get the information of imperceivable data, an efficient search technique based on "Trie" algorithm is applied on the database. So that a user can get imperceivable data (related to services) along with the prevalent information.**

Keywords— *imperceivable, Location-based Services, Trie, internal services, main service.*

I. INTRODUCTION

In the proposed system, we are using Mobile Host, Proxy server, Location-based services server.

Mobile Host: A mobile host or the mobile user is one who seeks the help of our application in order to find the nearest landmarks distance. To get the results, the mobile user first needs to enter the details like Service, Location, and Port Number.

Service (main service) is the one which categorize the things that user search. For example, user may search for nearest ATMs, Theatres, Restaurants, Textiles, Home Appliances, Shopping complexes etc. We named them as services.

Whereas the Shopping Complexes again consists those services and the user needs to get those results too.

Location should be entered by the user and the nearest services which the user has selected in that location will be sent as results to the user.

Port Number should be entered by the user. And that number will be used in communication between the server and client program. And that number will also be used in location-concealing technique.

Proxy Server: Proxy server is used as an intermediate server which is used in providing privacy. In the proxy server we use some techniques for concealing the details of the location. After concealing the information about the location of the user, the transformed information will be sent to the LBS server.

LBS Server: Location-based Services server is the one which processes the information received from the proxy server.

And the LBS server consists of the database. The database we implement was designed on our own. The database consists of the information about the services present at each and every location.

The database was designed on our own because in the existed system, some of the data regarding the services present in many of the locations has not been retrieved.

II. PROPOSED SYSTEM

In this system we are using "Trie" based algorithm because to retrieve the data which was not being retrieved in the previous systems. The unperceivable means that the information about the services present in the shopping malls, complexes has not been retrieved i.e., when a user requests to know about the nearest services, the information about those services present inside and outside the shopping malls, complexes will be sent to the user. With this feature, the user doesn't miss most of the information and with the Trie based algorithm which will be used for searching over the database.

And in this system, the privacy of the user has been protected. When the user requests for services, his/her location will be revealed to the LBS server. In an attempt not to reveal location, a technique has been used. And that technique involves changing the location into region so that the LBS Server can't figure out the exact location.
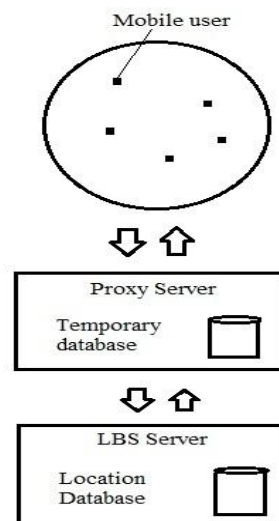
III. ARCHITECTURAL DESIGN

Figure 1.Architectural design

First, the mobile user requests for a particular service in any particular area.

Second, that request will be sent to the proxy server. The proxy server consists of temporary database which is used in concealing the details of the user with some information which is sent to the LBS Server can be recognizable by the proxy server but not by the it.

Third, the LBS server retrieves the information about the requested services in the particular location from its database.

The proxy will be used for providing privacy using the concealing techniques such as converting the location query into region query. The main reason behind this conversion is that the LBS Server will save the history of locations. That is the problem in which the saved history of locations may be used for illegal traces over the users which leads to privacy concerns.

Whenever the LBS Server receives the request, it looks up over the database using the efficient search algorithm which was based on the "trie".

IV. TECHINQUES USED IN PROPOSED SYSTEM:

A. *Trie algorithm:*

The "trie" algorithm is not used as it is. There were few changes made in this algorithm to fit into this system.
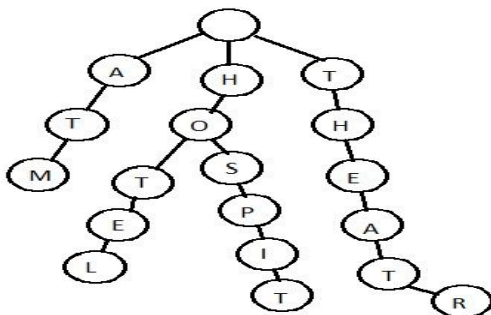

Figure 2.Trie Algorithm

In this system, this algorithm is used in the LBS Server to search over the database using String as a key.

The keywords in the "trie" algorithm are the services. The services are ATMs, Hotels, Hospitals and Theatres etc. At the time of searching, those keywords will be easily searched and the corresponding details will be looked up over the database.

Advantages: Better than the hash table and the binary search algorithm for searching over the database.

B. *Concealing technique:*

The concealing technique will be used in the Proxy Server for the conversion of location into region. This is done by the hash table mapping. In which for every location there will be a corresponding region number.

Whenever the user enters a location, that will be transformed into its corresponding region number .And this table will not be revealed to the LBS Server.

V. CONCLUSION:

Privacy: The user location is not revealed to the LBS Server (which saves locations for further examination).

Imperceivable data: The data regarding the inner services such as shopping malls, city complexes will be retrieved. In those, there will be again the services like ATMs, Theatres etc.

We concentrate on this because the previous projects did not focus on the services present in them.

*Efficient Search***:** Using the "trie" based algorithm to perform the search over the database and also we use different database design for easy retrieval of the data. With this, the results will be retrieved within a short period of time.

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