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Efficient location search using android mobile in offline mode

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Abstract - *A smart phone is the most widely used electronic device and it is the pivot of all smart systems. It has many features like online shopping, Communication over various places, E-learning, Finding location, Ticket booking etc..The current situation of finding the location on various places and its distance measurements can be done only using Internet. To prevent this internet usage, an location detection in offline mode is provided. An android application is used, which is an active approach to detect the location which is near to the user in offline mode. By putting all hospital location information into the database, the user can extract the location and their needs can be greatly improved.*

***Key Words*: Android ,Location ,Nearest search graph algorithm ,Offline mode ,GPS**

1. INTRODUCTION

One of the most widely used mobile OS these days is ANDROID. Android is a software bunch comprising not only operating system but also middleware and key applications like finding location. Location is the place where something is situated or its exact position and it can be found through online. Using location information we can go anywhere and at anytime. It defines the act of finding where something or someone is located with high degree of certainty. Using location detection the level of accuracy of the position can be increased.

2. LITERATURE SURVEY

Title : MobiShare: Sharing Context-Dependent Data & Services from Mobile Sources
Author : Efstratios Valavanis1 , Christopher Ververidis2, Michalis Vazirgianis
Year : 2016

Description:

The rapid advances in wireless communications technology and mobile computing have enabled personal mobile devices that we use in everyday life to become information and services providers by complementing or replacing fixed-location hosts connected to the wireline network. Such mobile resources can be highly important for other moving users, creating significant opportunities for many interesting and novel applications. The MobiShare architecture outlined in this paper provides the infrastructure for ubiquitous mobile access and mechanisms for publishing, discovering and accessing heterogeneous mobile resources in a large area, taking into account the context of both sources and requestors. Any wireless communication technology could be used between a device and the system. Furthermore, the use of XML-related languages and protocols for describing and exchanging metadata gives the system a uniform and easily adaptable interface, allowing a variety of devices to use it. The overall approach is data-centric and service-oriented, implying that all the devices are treated as producers or requestors of data wrapped as information services..

Title : A survey of computational location privacy
Author : John Krumm
Year : 2013

Description:

This is a literature survey of computational location privacy, meaning computation-based privacy mechanisms that treat location data as geometric information. This definition includes privacy-preserving algorithms like anonymity and obfuscation as well as privacy- breaking algorithms that exploit the geometric nature of the data. The survey omits non-computational techniques like manually inspecting geotagged photos, and it omits techniques like encryption or access control that treat location data as general symbols. The paper reviews studies of peoples' attitudes about location privacy, computational threats on leaked location data, and computational countermeasures .

Title : SpaceTwist: Managing the Trade-Offs Among Location Privacy, Query Performance, and Query Accuracy in Mobile Services
Author : Man Lung Yiu 1, Christian S. Jensen 1, Xuegang Huang 1, Hua Lu
Year : 2009

Description:

In a mobile service scenario, users query a server for nearby points of interest but they may not want to disclose their locations to the service. Intuitively, location privacy may be obtained at the cost of query performance and query accuracy. The challenge addressed is how to obtain the best possible performance, subjected to given requirements for location privacy and query accuracy. Existing privacy solutions that use spatial cloaking employ complex server query processing techniques and entail the transmission of large quantities of intermediate result. Solutions that use transformation-based matching generally fall short in

offering practical query accuracy guarantees. Our proposed framework, called SpaceTwist, rectifies these shortcomings for k nearest neighbor (kNN) queries. Starting with a location different from the user's actual location, nearest neighbors are retrieved incrementally until the query is answered correctly by the mobile terminal. This approach is flexible, needs no trusted middleware, and requires only well-known incremental NN query processing on the server. The framework also includes a server-side granular search technique that exploits relaxed query accuracy guarantees for obtaining better performance. The paper reports on empirical studies that elicit key properties of SpaceTwist and suggest that the framework offers very good performance and high privacy, at low communication cost..

Title : Decentralized Detection of Topological Events in Evolving Spatial Regions
Author : Muhammad Jafar Sadeq1, Matt Duckham1∗ and Michael F. Worboys2
Year : 2011

Description:

Qualitative information about topological events, like the merging or splitting of spatial regions, has many important applications in environmental monitoring. Examples of such applications include detecting the emergence of 'hot spots' in sea temperature around a coral reef; or the break up and dispersion of an environmental pollution spill. This paper develops and tests an efficient, decentralized spatial algorithm capable of detecting high-level topological events occurring to spatial regions monitored by a wireless sensor network. The algorithm, called In-Network Qualitative Identification of Region Evolution (INQUIRE), is decentralized because at no point does any single system element possess global knowledge of the entire system state. Instead, INQUIRE relies purely on a sensor node's local knowledge of its own state and the state of its immediate network neighbors. Experimental evaluation of the INQUIRE algorithm demonstrates that our decentralized approach can substantially improve scalability of communication when compared with efficient centralized alternatives.

Title : Mars: Real-time Spatio-temporal Queries on Microblogs
Author : Amr Magdy1§, Ahmed M. Aly2, Mohamed F. Mokbel3§, Sameh Elnikety4, Yuxiong He5, Suman Nath6
Year : 2013

Description:

Mars demonstration exploits the microblogs location information to support a wide variety of important spatiotemporal queries on microblogs. Supported queries include range, nearest-neighbor, and aggregate queries. Mars works under a challenging environment where streams of microblogs are arriving with high arrival rates. Mars distinguishes itself with three novel contributions: (1) Efficient in-memory digestion/ expiration techniques that can handle microblogs of high arrival rates up to 64,000 microblog/sec. This also includes highly accurate and efficient hopping-window based aggregation for incoming microblogs keywords. (2) Smart memory optimization and load shedding techniques that adjust in-memory contents based on the expected query load to trade off a significant storage savings with a slight and bounded accuracy loss. (3) Scalable real-time query processing, exploiting Zipf distributed microblogs data for efficient top-k aggregate query processing. In addition, Mars employs a scalable real-time nearest neighbor and range query processing module that employs various pruning techniques so that it serves heavy query workloads in real time. Mars is demonstrated using a stream of real tweets obtained from Twitter firehose with a production query workload obtained from Bing web search. We show that Mars serves incoming queries with an average latency of less than 4 msec and with 99% answer accuracy while saving up to 70% of storage overhead for different query loads.

3. Related work

In this work, if user need to search any query the user should switch on the GPS .The GPS grasp our current location. Then the user can search any location using internet .It shows the nearest path to the destination from source. The user can get the route and directions with the distance measurement. Search Graph Algorithm is used in this system . Using Search graph algorithm the user can find the nearby location in online mode in the related work .Search in combination with a new graph theoretic lower bounding techniques based on landmarks and triangle inequality.

3.1 limitation

The limitations in the related work , In rural areas if the internet connection is very poor then it is more difficult to search places. It takes more time to get a accurate location information. It consumes more data usage. No detailed information about the location. No specific information about hospitals.

4. Proposed Work:

In the Proposed work the user can find the nearby hospital location in offline mode. The User have to login or register to the application. Each and every user will be updated to the data base. Once the user sign-in to the application they can easily find their current location. The user can search the nearby hospital in offline mode. The user can find the nearby hospital with accurate latitude and longitude position. The user can have automatic call method to the doctors and the doctor gets information regarding user.

4.1Advantages

The proposed work will give the result which is nearest to the user. It take Less time to get a smartest one. The nearby

location can be found using offline mode. It has no internet issues like network problems, data consumptions. It helps people during emergency time. It can be used even in rural areas. It can be used in areas where there is a network problem.

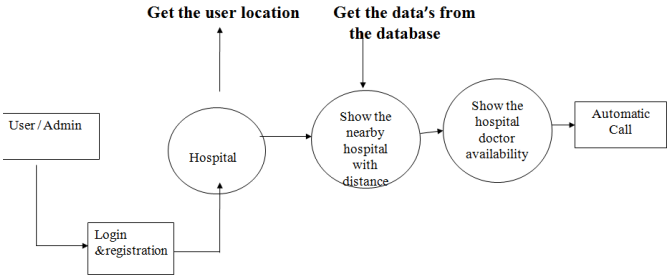


Chart -1: Block diagram

The signup page takes the user name, password and phone number and other details of the user.These detailed will be stored in the database.Login screen ask for the phone number or username and a password of the user. when the user/admin logins the app it should retrieve the data from the database. It checks for user information if it matches with user name and password that is stored in the database. It allows the user or else it will alert the user/admin.

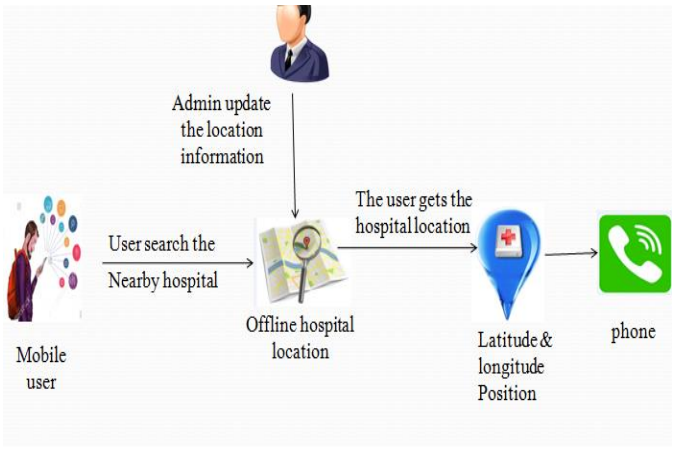


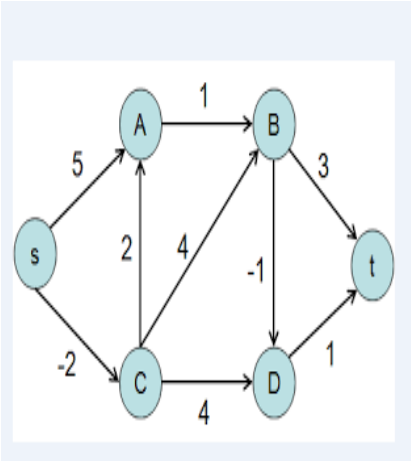
Fig -1: Architectural diagram

The admin adds the location information the hospital and its distance is updated into the data base.Adds the hospital and doctors details. All the details and personal details like phone number and address are stored. The stored details will be in encrypted format.

5. Algorithm

Nearest graph algorithm

The nearest result from x to y in order of increasing distance from x. It chooses the first minimum edge, stores this value. Adds the next minimum value from the next edge it selects. The nearest location will be found using this algorithm.



Node = nearest(g, s, d)

Returns all nodes in graph G that are within distance d from node s. If these graph is weighted that is if G edges contains a Variable weight, then those weights are used as the distance along the edges in the graph. Otherwise, all edge distance are taken to be 1.

6. Conclusion

Mobile Client is an Android application which is created. An Android Platform Kit (APK) file. Installed in the User's Android Mobile Phone. User registration page is created. Offline or Online modes are initialized .Location is Selected by the user with the required places. The Latitude and Longitude Position of the Hospital is provided with detailed information.

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