Efficient Filtering Algorithms for Location-Aware Publish/Subscribe

Abstract

Location-based services have been widely adopted in many systems. Existing works employ a pull model or user-initiated model, where a user issues a query to a server which replies with location-aware answers. To provide users with instant replies, a push model or server-initiated model is becoming an inevitable computing model in the next-generation location-based services. In the push model, subscribers register spatio-textual subscriptions to capture their interests, and publishers post spatio-textual messages. This calls for a high-performance location-aware publish/subscribe system to deliver publishers’ messages to relevant subscribers. In this paper, we address the research challenges that arise in designing a location-aware publish/subscribe system. We propose an R-tree based index by integrating textual descriptions into R-tree nodes. We devise efficient filtering algorithms and effective pruning techniques to achieve high performance. Our method can support both conjunctive queries and ranking queries. We discuss how to support dynamic updates efficiently. Experimental results show our method achieves high performance which can filter 500 messages in a second for 10 million subscriptions on a commodity computer.

EXISTING SYSTEM

In Existing System, pull model or user-initiated model, where a user issues a query to a server which replies with location-aware answers.
DRAWBACK OF EXISTING SYSTEM

Query to a server which responds with location aware answers, which returns answers based on user’s location and keywords.

PROPOSED SYSTEM

To provide users with instant replies, a push model or server-initiated model is becoming an inevitable computing model in the next-generation location-based services. We propose an R-tree based index by integrating textual descriptions into R-tree nodes.

ADVANTAGE OF PROPOSED SYSTEM

Support both conjunctive queries and ranking queries.
Instant replies, a push model or server-initiated model.

SYSTEM SPECIFICATION

Hardware Requirements

System : Pentium IV 2.4 GHz
Hard Disk : 40 GB
Floppy Drive : 1.44 Mb
Monitor : 15 VGA Colour
Mouse : Logitech
Software Requirements

- Operating system: Windows Family
- Tools: eclipse/Netbeans
- Technology Used: Java
- Backend Used: SQL Server