

Materialized Views Maintenance in the Mobile Environment

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Abstract

Mobility is an important property for many distributed applications, unfortunately such applications is restricted by the constraints of limited bandwidth, mobile disconnection; also sending messages consumes considerable energy that is limited in mobile battery. These problems can be solved by materializing views in different mobile to reduce access and communications, whether database changes are made, the updating of views is needed. This process is called materialized view maintenance. In this paper, we investigate view maintenance in a mobile environment. We propose a new approach based on the concept of self-maintainable group, each group based on different mobile will contain a set of materialized views, we associate this group a set of auxiliary views (AVs), this set of AVs will allow the group to be self-maintainable, then, we propose an algorithm of views maintenance in two steps, notification of the modification then calculation and sending of the update to the views. Finally simulation experiments implemented with java, show that both le maintenance cost and total message number are reduced in case of using of our proposal, we compared maintenance cost in various situations in order to find the optimal conditions that our proposal is more efficient.

Keywords

Data base, materialized view, mobile environment, view maintenance.