

Top-k Monitoring Queries for Wireless Sensor Database Systems: Design and Implementation

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Abstract

A wireless sensor database differs from a relational database, in that it is comprised of a wireless sensor network (WSN), not disks. Nevertheless, the sensing data in the wireless sensor database still are represented as tables. Abstracting the sensing data as the table, end users are able to use SQL to retrieve the required sensing data and do not become aware of the WSN. In the wireless sensor database, top-k monitoring query is an important application and has received much attention in the research community. This research builds on an existing wireless sensor database, TinyDB, and equips TinyDB with the function of performing top-k monitoring queries. The end users finally are able to submit a top-k SQL statement to the wireless sensor database and indeed retrieve the required top-k sensing readings from the WSN.

Keyword : top-k monitoring query; wireless sensor network; wireless sensor database system.