

Summarizing former sessions for user-centric OLAP

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Abstract. We propose a framework for summarizing former analyses to assist the user exploring a data cube. In this framework, simple operators are used for automatically summarizing log files consisted of sequences of unevaluated OLAP queries. We provide a simple implementation of the framework for summarizing logs of OLAP queries, and we test it with respect to a query personalization technique based on mining a query log.

1 Introduction

It is commonly acknowledged that analysing data cubes using OLAP for navigating is a tedious task Sarawagi et al. (1998); Sarawagi (1999). On the other hand, it is also admitted that leveraging the knowledge captured by former issued queries, usually stored in the DB query log, constitute a valuable assistance to the user when formulating new queries Khoussainova et al. (2009).

For instance, in the context of scientific databases, where relational databases and SQL are used for conducting analytical sessions over huge repositories of data Khoussainova et al. (2010), it has recently been shown that looking at former sessions over the database helps users to organize new analytical sessions for better exploring the database Khoussainova et al. (2011).

To support the analytical exploration of data warehouses, we propose in this paper to summarize former analyses to better present them to the user. More precisely, our contribution is threefold: 1) we introduce a simple logical framework for summarizing query logs consisting of sets of sessions of OLAP queries, 2) we propose an implementation of this framework, and 3) we evaluate our approach for user-centric OLAP by testing it with respect to a personalization technique based on mining a query log Aligon et al. (2011a).

The paper is organized as follows. Section 2 briefly comments related work. Section 3 introduces the basic definitions for cube, queries and log. Section 4 presents our logical framework, while its implementation is presented Section 5. Section 6 describes the experiment we run for evaluating our approach. Section 7 concludes the paper and discusses perspectives.

2 Related work

User-centric approaches for assisting the user in her analyses, like recommendation and personalization, are getting more and more attention, in the domain of relational databases