Abstract

Data warehouses are huge repositories designed to enable the knowledge workers to make better and faster decisions. Due to its significance in strategic decision making, there is a need to assure data warehouse quality in the presence of evolution events which may be generated as result of change in schema / software or data warehouse requirements. One of the factors affecting the data warehouse quality is view maintenance models quality. Although there are some useful guidelines for designing good view maintenance models, but objective indicators, i.e., metrics are needed to help designers to develop quality view maintenance models. In our previous work, a quality metric for View maintenance models of data warehouse is proposed [25] However, the proposal overall lacks theoretical and empirical validation of the metric proposed. Hence, the metric practical utility could not be established. This paper validates the metrics both theoretically and empirically. The theoretical validation is performed using Zuse framework [7] while empirical validation is carried out using MVPP (Multiple View Processing Plan) to explore the relationship between the proposed metrics and cost efficiency of View maintenance models. The results show that all the four metrics NBR, NVM, NAMV and NFMV
have significant impact on the cost efficiency of View maintenance models.

References


Quality metrics Validation in View Maintenance Models of Data Warehouse


Index Terms

Computer Science

Data Mining

Keywords

Data Warehouse, Data Warehouse Evolution, View maintenance models.