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## A Rule-based Skyline Computation over a Dynamic Database (Conference Paper)

Dehaki, G.B.<sup>a</sup> ✉, Ibrahim, H.<sup>a</sup> ✉, Sidi, F.<sup>a</sup> ✉, Udzir, N.I.<sup>a</sup> ✉, Alwan, A.A.<sup>b</sup> ✉

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### Abstract

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Skyline query which relies on the notion of Pareto dominance filters the data items from a database by ensuring only those data items that are not worse than any others are selected as skylines. However, the dynamic nature of databases in which their states and/or structures change throughout their lifetime to incorporate the current and latest information of database applications, requires a new set of skylines to be derived. Blindly computing skylines on the new state/structure of a database is inefficient, as not all the data items are affected by the changes. Hence, this paper proposes a rule-based approach in tackling the above issue with the main aim at avoiding unnecessary skyline computations. Based on the type of operation that changes the state/structure of a database, i.e. insert/delete/update a data item(s) or add/remove a dimension(s), a set of rules are defined. Besides, the prominent dominance relationships when pairwise comparisons are performed are retained; which are then utilised in the process of computing a new set of skylines. Several analyses have been conducted to evaluate the performance and prove the efficiency of our proposed solution. © 2020 ACM.

### SciVal Topic Prominence ⓘ

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### Indexed keywords

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