

THE TABU SEARCH APPLICATION: AN APPROACH TO MINE MARKET BASKET DATA

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[dx.doi.org/10.18374/RBR-13-1.8](https://doi.org/10.18374/RBR-13-1.8)

ABSTRACT

The economic value of data mining is well established. Market basket analysis is one of the most well-known data mining techniques that is used to discover the customer purchase patterns. However, as the size of the dataset increases, the mining process becomes increasingly cumbersome and time consuming. In this paper, we propose to apply Tabu search metaheuristic (TS) to find global optimal solutions for large scale market basket datasets. In preparation for Tabu search, a market basket dataset is converted to a graph-based network. The result of an experiment with a large scale supermarket dataset show that the proposed TS algorithm produces highly accurate solutions in reduced computational times comparing to the traditional algorithm used by SAS Enterprise Miner.

Keywords: *Market basket, Tabu search, Meta-heuristic*