

# Clustering Demand-dependent Items for the Assignment of Storage Location

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## Abstract

We study the problem of clustering inventory items to assign storage locations. The idea of the correlated assignment strategy is that in case some items are frequently requested together, the number of travels of storage/retrieval(S/R) equipment and the time to pick orders may be reduced significantly by assigning the same storage location to the items. Inventory related cost as well as material handling cost is considered to determine the space requirement and the storage location of each item simultaneously. Material handling costs not only for the order picking but also for the replenishment are considered. An improvement heuristic algorithm is developed for the problem. We provide a numerical example to illustrate the algorithm developed. The performance of the algorithm is evaluated through a numerical experimentation.