

Integrated Design of the Zoning Storage, Order Batching, Route Planning in  
Distribution Center

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Abstract

The logistics management is one part of supply chain procedures; however, warehousing system is also a part of logistics management. Therefore, it is an important issue to execute the order picking operation in warehouse systems. This paper applies ant system to redesign the storage assignment, and planning the order-picking path. Then, compare ant system and cross+ strategy to find the optimal solution in route planning respectively. In accordance with literature reviews and a deep empirical understanding, with the proper usage of zoning storage, order batching, storage assignment and routing planning can be used to reach the objective of minimizing average order picking distances, average order picking times, and improving the vehicle utilization percentage.

Keyword : order batching, storage assignment, association rule, route planning, ant system