Algorithm for Linear Number Partitioning into Maximum Number of Subsets

Abstract

The number partitioning problem is to decide whether a given multiset of integers can be partitioned into two 'halves'; of given cardinalities such that the discrepancy, the absolute value of the difference of their sums, is minimized. While Partitioning problem is known to be NP-complete, only few studies have investigated on its variations. While lots of investigation has been made for two-way partitioning, only a few have for multi-way partitioning, while most of them are not feasible for real time environment. We introduce an improved multi-way partitioning algorithm feasible for real time which returns maximum number of subset can be made based on the order of the numbers as they appear.

References

- Walsh, "Where are the really hard manipulation problems? The phase transition in manipulating the veto rule," IJCAI-09, p. 324–329.


**Index Terms**

Computer Science  
Algorithms

**Keywords**

Anytime algorithm  
Greedy heuristic  
Linear partitioning  
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