Abstract

Insertion sort gives a time complexity of O(n) for the best case. In the worst case where the input is in the descending order fashion, the time complexity is O(n^2). In the case of arrays, shifting takes O(n^2) while in the case of linked lists comparison comes to O(n^2). Here a new way of sorting for the worst case problem is proposed by using arrays as data structure and taking more space. 2n spaces is taken where n is the number of elements and starts the
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insertion from (n-1)th location of the array. In this proposed technique the time complexity is O(nlogn) as compared to O(n^2) in the worst case.

References

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- Michael A. Bender, "Insertion Sort is O(nlogn)", Third International Conference on Fun With Algorithms (FUN), Pages 16-23, 2004

Index Terms

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Keywords

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