Comparing Linear Search and Binary Search Algorithms to Search an Element from a Linear List Implemented through Static Array, Dynamic Array and Linked List

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Abstract

Information retrieval is the most fundamental requirement for any kind of computing application and which requires search operation to be performed from massive databases implemented by various data structures. Searching an element from the list is the fundamental aspects in computing world. Numbers of algorithms are developed for searching an element among which linear search and binary search are the most popular algorithms. In this paper researcher has made efforts to compare these both algorithms to implement on various data structures and to find out the solution to implement binary search on linked linear list. This paper also analyzes both the algorithms at some extent for the applicability and execution efficiency. This paper also analyzes the few data structures to implement these algorithms. At last based on the linear search and binary search algorithms, one algorithm is designed to function on linked linear list.

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Index Terms

Computer Science
Information Sciences

Keywords

Linear Search  Binary Search  Static array  Dynamic array  Linked List  Binary Search Tree

Time Complexity

Algorithm Efficiency
Algorithm Analysis