Abstract

Searching on an element from a large set of data elements is always a time taking task. It becomes more challenging if the data set is random and is very large, having millions of items. Many searching techniques already exist like linear search, two-way linear search, etc. All the exiting algorithms have their best and worst performances depending upon the input cases. This paper proposed a new technique Left-Right midway (LRMW) linear search algorithm, which is based on the midway and then two-way method. The proposed algorithm works well in many types of input cases. The proposed algorithm, linear search algorithm, and two-way linear search algorithm is implemented in C language and tested on different size of input elements and time of execution is calculated for all the three algorithms for all input elements. Results show significant improvement if the data set is extensive and the required element is present nearby the middle element. The time complexity analysis of the proposed algorithm is also discussed in the paper.
Left-Right Mid Way Linear Searching Algorithm

References

1. Subbarayudu, B., et al. "Comparative Analysis on Sorting and Searching Algorithms." International Journal of Civil Engineering and Technology (IJCIET) 8.8 (2017): 955-978.
2. Rahim, Robbi, et al. "Comparison Searching Process of Linear, Binary and Interpolation Algorithm." J. Phys. Conf. Ser. Vol. 930. No. 1. 2017.
3. Arora, Nitin, Anil Kumar, and Pramod Mehra. "Two Way Counting Position Sort." International Journal of Computer Applications 57.12 (2012).
4. Arora, Nitin, Garima Bhasin, and Neha Sharma. "Two way linear search algorithm." International Journal of Computer Applications 107.21 (2014).
5. Rahim, Robbi, Iskandar Zulkarnain, and Hendra Jaya. "Double hashing technique in closed hashing search process." IOP Conference Series: Materials Science and Engineering. Vol. 237. No. 1. IOP Publishing, 2017.
6. Karthik, S. "Odd Even Based Binary Search." International Journal of Computer Engineering & Technology (IJCET) 7.5 (2016): 40-55.
7. Arora, Nitin, Mamta Martolia Arora, and Esha Arora. "A Novel Ternary Search Algorithm." International Journal of Computer Applications 144.11 (2016).
8. Arora, Nitin, Suresh Kumar, and Vivek Kumar Tamta. "A novel sorting algorithm and comparison with Bubble sort and Insertion sort." International Journal of Computer Applications 45.1 (2012): 31-32.
9. ALAJEELI, Adnan Saher Mohammed. Development of Sorting and Searching Algorithms. Diss. Ankara Yıldırım Beyazıt Üniversitesi Fen Bilimleri Enstitüsü, 2017.
10. Arora, Nitin, Pradeep Kumar Kaushik, and Satendra Kumar. "Iterative method for recreating a binary tree from its traversals." International Journal of Computer Applications 57.11 (2012): 6-13.
11. Lipschutz, Seymour. "Data Structure with C, Schaum Series." (2009).
12. McGraw-Hill, Herbert Schildt Tata. "The Complete Reference C." (2005).

Index Terms

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Keywords

Linear Search; Binary search; Two Way Linear Search; Time Complexity Analysis.