



# ADVANCED DATA STRUCTURES

An Algorithmic Approach with C++

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## Advanced Data Structures

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## Product Description

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Each chapter begins with an outline an overview, and a list of learning objective. Extensive coverage of data Structure basics, pictorial representation of each and every Data Structures in given in detail. Covers all tree structures like binary tree, binary search trees, AVL, B+-tree and red black trees in detail. Brief introduction to binary heaps, heap operations, specifications, implementation and applications is covered. Demonstration the development of algorithms is a lucid manner. Includes numbers illustrative examples to understand the topic easily. Demonstrates the implementation of algorithms in a good programming style. Diagrams are used extensively throughout the text. Contains numerous theory questions at the last of each chapter. Gives detailed description of advanced head structures, priority queue operations, and double ended priority queues in lucid manner. Includes the concepts like dictionaries, binomial heaps, Fibonacci heaps. Data structures for disjoint sets, tables and table operations. Gives detailed description of amortized analysis, starting matching, and graph algorithms. Detailed analysis of each and every sorting and searching technique is covered with the help of programming examples. Presents various external data structures-external storage, external files, external sorting searching indexing files, external hashing. Brief introduction to the concept of file and storage management.

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**Chapter 1:** Elementary Data Structures. **Chapter 2:** Review of Algorithm Analysis. **Chapter 3:** Trees. **Chapter 4:** Binary Search Trees. **Chapter 5:** Red Black Trees. **Chapter 6:** B Trees. **Chapter 7:** AVL Trees. **Chapter 8:** 2-3 Trees. **Chapter 9:** 2-3-4 Trees. **Chapter 10:** Heaps. **Chapter 11:** Advanced Heap Structures. **Chapter 12:** Dictionaries. **Chapter 13:** Binomial Heaps. **Chapter 14:** Fibonacci Heaps. **Chapter 15:** Data Structures For Disjoint Sets And Tables. **Chapter 16:** Amortized Analysis. **Chapter 17:** String Processing. **Chapter 18:** Graphs. **Chapter 19:** Sorting And Searching Techniques. **Chapter 20:** External Data Structures. **Chapter 21:** External Hashing. **Chapter 22:** Dynamic Storage Management.

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## Author

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