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**Korsh, James F.**

**Data structures, algorithms, and program style.**

Boston: PWS Computer Science. XII, 499 p.; L 16.95 (1986).

The book is a good course in programming and also an introduction in advanced topics in data structures. It requires no special background in mathematics and a minimal knowledge of the Pascal programming language. The current techniques for the creation and debugging of programs are presented, with an emphasis on programming style. Some applications involving high structured organizations of data are also discussed. The book has two parts: “Fundamentals” and “Applications”. The six chapters of the first part have the following topics: 1. “Programming structure” in which, using an informal way, terms as: structured programming, data abstraction, top-down design, modularization, are introduced. 2. “Records, arrays, and pointers”. 3. “Lists” in which algorithms for insertion, deletion in lists, and list traversal are presented, firstly independent of implementation, then with pointers and arrays. 4. “Introduction to recursion, stacks, and queues”. 5. “More complex lists” in which recursive and stack-based algorithms for lists-of-lists traversal are discussed. 6. “Trees” in which algorithms for insertion, deletion in trees as well as tree traversal in all three orders are presented. Various representations of trees are discussed. In the second part of the book six applications involving advanced data structures are presented: - searching and sorting using arrays, trees, and lists; - files in several representations and accesses; - topological sorting; - compiler data structures: derivation trees, symbol tables, translations; - text compressing and optimal trees; - heap-based storage management. A nice thing: each chapter is ended with a more important example illustrating the topic of the chapter. The majority of these examples are solutions of some classical, well known problems. In each chapter a set of exercises is included. The book is interesting not only for students in computer science, but also for programmers eager to know more about data structures. *L.Șerbănați*

*Keywords:* Pascal; structured programming; data structures; top-down design; lists; searching and sorting; storage management; exercises