

<<数据结构与程序设计>>

图书基本信息

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内容概要

本书以C++为描述语言，系统介绍数据结构的有关内容及程序设计方法。

每章都是先引入实例，然后结合实例讲解知识点，每章后都附有指针和陷阱的内容，还配有复习思考题，以检验读者的学习效果和培养读者的程序设计能力。

此外，每章后还有深入学习本章知识点的阅读参考资料，有利于读者加深对本章知识点的理解。

书后附录包括算法分析中的数学结论、随机数、程序包和实用函数，以及零散分布在书中的所有程序规则、指针和陷阱等。

全书既注重原理又重视实践，内容叙述详细，并配有大量的实例和习题。

书中所有算法均在计算机上运行通过，且程序中做了较详细的注解，有利于读者理解算法的实质和编程思想。

本书既可作为高等学校计算机及相关专业学生的教材，亦可供从事计算机应用的工程技术人员参考，尤其适合那些使用C++语言编程的科技人员。

内容: 1. 程序设计原理 2. 栈的介绍 3. 队列 4. 链式栈和队列 5. 递归 6. 表和串 7. 查找 8. 排序 9. 数据表和信息检索 10. 二叉树 11. 多叉树 12. 图 13. 案例学习——波兰表示法。

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章节摘录

版权页：插图：It is the combination of flexibility, generality and efficiency that has made C++ one of the most popular choices for programmers at the present time. We shall discover that the general principles that underlie the design of all data structures are naturally implemented by the data abstractin and the object-oriented features of C++. Therefore, we shall carefully explain how these aspects of C++ are used and briefly summarize their syntax (grammar) wherever they first arise in our book. In this way, we shall illustrate and describe many of the features of C++ that do not belong to its small overlap with C. For the precise details of C++ syntax, consult a textbook on C++ programming—we recommend several such books in the references at the end of this chapter. Throughout this chapter we shall concentrate on one case study that, while not large by realistic standards, illustrates both the principles of program design and the pitfalls that we should learn to avoid. Sometimes the example motivates general principles; sometimes the general discussion comes first; always it is with the view of discovering general principles that will prove their value in a range of practical applications. In later chapters we shall employ similar methods for larger projects. The example we shall use is the game called Life, which was introduced by the British mathematician J. H. CONWAY in 1970. Life is really a simulation, not a game with players. It takes place on an unbounded rectangular grid in which each cell can either be occupied by an organism or not. Occupied cells are called alive; unoccupied cells are called dead. Which cells are alive changes from generation to generation according to the number of neighbor-ing cells that are alive, as follows.

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