

《算法技术手册》

图书基本信息

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内容概要

创造稳定的软件需要有效的算法，但是程序设计者们很少能在问题出现之前就想到。《算法技术手册(影印版)》描述了现有的可以解决多种问题的算法，并且能够帮助你根据需求选择并实现正确的算法——只需要一定的数学知识即可理解并分析算法执行。相对于理论来说，本书更注重实际运用，书中提供了多种程序语言中可用的有效代码解决方案，可轻而易举地适合一个特定的项目。有了这本书，你可以：

解决特定编码问题或改进现有解决方案的执行；

迅速确定与需要解决的问题相关的算法，并判定为什么这样的算法是正确的；

探索C、C++、Java、Ruby中的算法解决方案，伴有实现诀窍；

了解一个算法预期的执行情况及最佳的执行条件；

发现不同算法中相似设计产生的冲突；

学习先进的数据结构以改进算法效率。

有了《算法技术手册》，你可以学习如何改进算法的性能，这是软件应用成功的关键。

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作者简介

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书籍目录

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章节摘录

In the sortPointers function of Example 4 - 11, each element in the input is inserted into its associated bucket based upon the provided hash function; this takes linear, or $O(n)$, time. The elements in the buckets are not sorted, but because of the careful design of the hash function, we know that all elements in bucket b_j are smaller than the elements in bucket b_i , if $i < j$. As the values are extracted from the buckets and written back into the input array, INSERTION SORT is used when a bucket contains more than a single element. For BUCKET SORT to exhibit $O(n)$ behavior, we must guarantee that the total time to sort each of these buckets is also $O(n)$. Let n_i define n_i to be the number of elements partitioned in bucket b_i . We can treat n_i as a random variable (using statistical theory). NOW consider the expected value. Each element in the input set has probability $p = 1/n$ of being inserted into a given bucket because each of these elements is uniformly drawn from the range $[0, 1)$. Therefore, $E[n_i] = n * p = n * (1/n) = 1$. From this equation we can compute the expected value of n_i^2 . This is critical because it is the factor that determines the COST of INSERTION SORT, which runs in a worst case of $O(n^2)$. We compute $E[n_i^2] = (1 - 1/n) + 1 = (2 - 1/n)$, which shows that $E[n_i^2]$ is a constant. This means that when we sum up the COSTS of executing INSERTION SORT on all n buckets, the expected performance COST remains.

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媒体关注与评论

“作者汲取了大量鲜为人知的文献资料，这本不可或缺的指南巩固了理论与实际操作完美平衡。通过它来理解算法变得更加轻松容易。” ——Matthew Russell，高级技术总监，Digital Reasoning System；《Dojo：The Definitive Guide》的作者（OReilly）

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精彩短评

- 1、很好的一个总结。而且算法的伪代码加上简单的配图实例，非常好。比较奇怪的是排序算法里面没有归并排序，一般的算法书上好像都会提这个的。
- 2、挺不错的一本小册子，很实用，很方便简单的温习一下当年的算法课
- 3、影印版
- 4、很不错的书，适合我这种看到《算法导论》就头大的人，适当量的推理，对算法适用场合清晰的阐述，比较适合做案头书
- 5、抽空找找回忆
- 6、上学看过，复习挺好
- 7、只要是奥莱离出版的，总是要找来几本翻翻看，这算法才叫实用！你索索你丫能在内存管理写内存缓冲区的时候用他妈强连通子图算法吗？

精彩书评

1、看得英文版，不难懂。里面的算法伪代码和配套图示非常棒。比较奇怪的是排序里面没有提到归并，这个一般的算法书里面都会讲到。总之，作为一本快速查询算法的书籍，名副其实。就算你原来不懂的算法，看过了基本上也能理解。最多复杂度分析什么的可能需要一些更全面的书籍来解答。

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