

《数据库系统实现》

图书基本信息

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前言

This book covers the core of the material taught in the database sequence at Stanford. The introductory course, CS145, uses the first twelve chapters, and is designed for all students -those who want to use database systems as well as those who want to get involved in database implementation. The second course, CS245 on database implementation, covers most of the rest of the book. However, some material is covered in more detail in special topics courses. These include CS346 (implementation project) , which concentrates on query optimization as in Chapters 15 and 16. Also, CS345A, on data mining and Web mining, covers the material in the last two chapters. What's New in the Second Edition After a brief introduction in Chapter 1, we cover relational modeling in Chapters 2-4. Chapter 2 is devoted to high-level modeling. There, in addition to the E/R model, we now cover UML (Unified Modeling Language) . We also have moved to Chapter 4 a shorter version of the material on ODL, treating it as a design language for relational database schemas. The material on functional and multivalued dependencies has been modified and remains in Chapter 3. We have changed our viewpoint, so that a functional dependency is assumed to have a set of attributes on the right. We have also given explicitly certain algorithms, including the "chase," that allow us to manipulate dependencies. We have augmented our discussion of third normal form to include the 3NF synthesis algorithm and to make clear what the tradeoff between 3NF and BCNF is. Chapter 5 contains the coverage of relational algebra from the previous edition, and is joined by (part of) the treatment of Datalog from the old Chapter 10. The discussion of recursion in Datalog is either moved to the book's Web site or combined with the treatment of recursive SQL in Chapter 10 of this edition. Chapters 6-10 are devoted to aspects of SQL programming, and they represent a reorganization and augmentation of the earlier book's Chapters 6, 7, 8, and parts of 10. The material on views and indexes has been moved to its own chapter.

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内容概要

《数据库系统实现(英文版第2版)》是关于数据库系统实现方面内容最为全面的著作之一，是美国斯坦福大学计算机科学专业数据库系列课程第二门课程的指定教材。书中从数据库实现者的角度对数据库系统实现原理进行了深入阐述。并具体讨论了数据库管理系统的三个主要成分——存储管理器、查询处理器和事务管理器的实现技术。斯坦福大学计算机科学专业数据库系列课程第一门课程的内容包括数据库设计和数据库编程。《数据库系统实现(英文版第2版)》的后两位作者Jeffrey D.Ullman和Jennifer Widom为该课程编写的教材《数据库系统基础教程》(A First Course in Database Systems)第3版的中文翻译版和英文影印版已由机械工业出版社出版。

《数据库系统实现(英文版第2版)》内容深入且全面，技术实用且先进，叙述深入浅出，是一本难得的高层次的教材，适合作为高等院校计算机专业研究生的教材或本科生的教学参考书，也适合作为从事相关研究或开发工作的专业技术人员的高级参考资料。

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作者简介

加西亚 - 莫利纳 (Hector Garcia-Molina) 斯坦福大学计算机科学与电子工程系的Leonard Bosack和Sandra Lerner教授。他在数据库系统、分布式系统和数字图书馆领域中发表了大量论文。研究兴趣包括分布式计算系统、数据库系统和数字图书馆。他是ACM会士、美国艺术与科学院会士和

书籍目录

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章节摘录

插图：13.2 Disks The use of secondary storage is one of the important characteristics of a DBMS, and secondary storage is almost exclusively based on magnetic disks. Thus, to motivate many of the ideas used in DBMS implementation, we must examine the operation of disks in detail.

13.2.1 Mechanics of Disks

The two principal moving pieces of a disk drive are shown in Fig. 13.2; they are a disk assembly and a head assembly. The disk assembly consists of one or more circular platters that rotate around a central spindle. The upper and lower surfaces of the platters are covered with a thin layer of magnetic material, on which bits are stored. O's and I's are represented by different patterns in the magnetic material. A common diameter for disk platters is 3.5 inches, although disks with diameters from an inch to several feet have been built. The disk is organized into tracks, which are concentric circles on a single platter. The tracks that are at a fixed radius from the center, among all the surfaces, form one cylinder. Tracks occupy most of a surface, except for the region closest to the spindle, as can be seen in the top view of Fig. 13.3. The density of data is much greater along a track than radially. In 2008, a typical disk has about 100,000 tracks per inch but stores about a million bits per inch along the tracks. Tracks are organized into sectors, which are segments of the circle separated by gaps that are not magnetized to represent either O's or I's.¹ The sector is an indivisible unit, as far as reading and writing the disk is concerned. It is also indivisible as far as errors are concerned.

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编辑推荐

《数据库系统实现(英文版第2版)》：经典原版书库

精彩短评

- 1、书送来的时候是有塑封的，很好，里面的内容很丰富，很喜欢
- 2、对DBMS的实现比其他数据库原理方面的书要全面。
- 3、强烈推荐。很好很经典。
- 4、书还不错，可以看看吧
- 5、参照前面“nietiezheng”帅哥的评价。
- 6、书的内容很不错哦
- 7、老师推荐的教材，书的作者都是大牛，内容很不错，书的印刷质量还可以，快递为两天到货，很快，很满意，，
- 8、主要讨论了存储管理器，查询管理器和事务管理器的实现技术
- 9、太详尽，不大适合我，送给别人了。
- 10、书不错。。。就是快递差点。。。
- 11、不错的书，现在有对应的中文版，对照着看，很好
- 12、不错，影印版，之前看过中文版，现在再读一下英文。
- 13、当教材看，本来看见1000多页还以为很大很厚呢，没想到还是小点的书，从500多页开始的，书还是很经典的，讲的很明白
- 14、纸张质量还不错。呵呵。
- 15、很不错的一本原理方面的书，有助于自己看mysql和postgresql源代码！
- 16、很意外，内容是《A First Course in Database Systems (Third Edition)》和《Database System Implementation (Second Edition)》两本书合起来的，其实书名应该是《数据库全书》。
- 17、经典，学计算机的值得一读！！
- 18、挺满意的。没什么毛病。
- 19、学校要求使用的教材，内容很棒
- 20、先说下本书的内容吧。这本书中主要讲的是数据库系统内部的数据结构和算法，具体内容可以看目录。本书适合于具有一定数据库基本知识的读者进一步了解数据库内部原来，对于数据库系统上的开发人员和管理人员也有很大的帮助，尤其在查询语句的调优上。建议数据库方向的研究生或想找相关工作的人员看一下，里面的很多算法和结构都是很常用的，如归并排序。
这本书的第一版已经发行很长时间了,相比之下第二版增加了很多近几年数据库领域的最新研究成果。主要包括：20章中介绍了Map-Reduce并行框架和一些p2p查询技术，21章的信息集成介绍了商业智能相关的技术，22章介绍了在大规模数据上的数据挖掘技术，而23章介绍了搜索引擎的主要技术。遗憾的是，本书没有介绍XML数据库系统的相关处理技术。
- 21、从数据磁盘存储，到索引存储空间、词法分析到关系恒等优化，可谓是数据库的深入经典，是硬基本功的教材，不过对于一般读者攻坚比较困难，但是想要提升数据库的朋友还是力推的。一句话总结一些：如果C和汇编掌握较好，这本书可以带你写一个数据库管理系统出来！！！有点夸张，但是很喜欢！！
- 22、只有懂数据库基本原理了，以后用什么数据库都不怕，千万别只学SQL，千万别比谁写的SQL语句更长更复杂，那可能带来噩梦，情愿大家都只会“SELECT...WHERE...”。会再多的数据库名字都没有把最基本的原理搞清楚重要。个人其实没有正经学过数据库，最先接触的却是Google Bigtable，开始觉得高大上，但当读了数据库基本原理后，发现所有这些东西原理是一样的。
- 23、果然国内最缺的就是良心商人。国内商家不是偷工减料，就是玩玩手术刀，买国内书，伤不起。
- 24、需要《数据库系统基础教程》作为第一本啊，呵呵。本书质量很好。
- 25、买了两本书 书脊全都折了 不是很满意
- 26、我们正在依照PostgreSQL做个数据库原型.有这本书参考,省了不少事.看代码也比较清晰了.三个作者都是大牛.
- 27、页码怎么是从五百多页开始的呢？？求解~~
- 28、跟上册的印刷差不多，都很模糊，而且字体比较小，是不是直接拿图片的PDF来印的，这样跟盗版书有什么区别啊？？
- 29、送货很及时，书本质量不错

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精彩书评

- 1、国内大部分数据库的书都是讲概念，而这本书是告诉你一个真正的数据库系统内部是如何工作的。如果你打算深入研究数据库技术或者要写一个数据库，这本书绝对是必备的。

章节试读

1、《数据库系统实现》的笔记-第905页

Upgrading Locks需要仔细看看

《数据库系统实现》

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