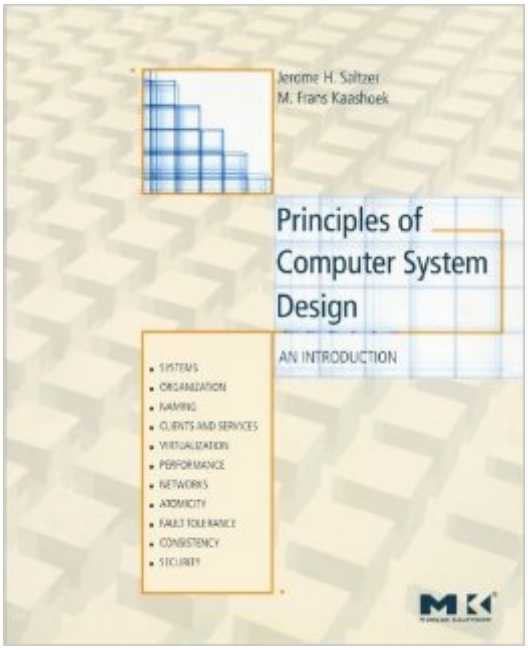
# Principles Of Computer System Design: An Introduction



## Synopsis

This text identifies, examines, and illustrates fundamental concepts in computer system design that are common across operating systems, networks, database systems, distributed systems, programming languages, software engineering, security, fault tolerance, and architecture. Through carefully analyzed case studies from each of these disciplines, it demonstrates how to apply these concepts to tackle practical system design problems. To support the focus on design, the text identifies and explains abstractions that have proven successful in practice such as, remote procedure call, client/service organization, file systems, data integrity, consistency, and authenticated messages. Most computer systems are built using a handful of such abstractions. The text describes how these abstractions are implemented, demonstrates how they are used in different systems, and prepares the reader to apply them in future designs.  This unique book is offered in an online / offline split: Chapters 1-6 are included in the book available from Morgan Kaufmann in print or ebook form. Chapters 7-11 are available online under a Creative Commons license. Download them for free at http://www.elsevierdirect.com/companion.jsp?ISBN=9780123749574 Features: Concepts of computer system design guided by fundamental principles.Cross-cutting approach that identifies abstractions common to networking, operating systems, transaction systems, distributed systems, architecture, and software engineering.Case studies that make the abstractions real: naming (DNS and the URL); file systems (the UNIX file system); clients and services (NFS); virtualization (virtual machines); scheduling (disk arms); security (TLS).Numerous pseudocode fragments that provide concrete examples of abstract concepts.Extensive support. The authors and MIT OpenCourseWareÂ  provide on-line, free of charge, open educational resources, including additional chapters, course syllabi, board layouts and slides, lecture videos, and an archive of lecture schedules, class assignments, and design projects.

## Book Information

Paperback: 560 pages
Publisher: Morgan Kaufmann; 1 edition (July 7, 2009)
Language: English
ISBN-10: 0123749573
ISBN-13: 978-0123749574
Product Dimensions:  7.5 x 1.3 x 9.2 inches
Shipping Weight: 2.6 pounds (View shipping rates and policies)

Average Customer Review:  3.2 out of 5 starsÂ Â See all reviewsÂ (10 customer reviews)
Best Sellers Rank: #345,595 in Books (See Top 100 in Books)  #31 inÂ Books > Computers & Technology > Hardware & DIY > Microprocessors & System Design > Microprocessor Design #169 inÂ Books > Computers & Technology > Computer Science > Systems Analysis & Design #399 inÂ Books > Textbooks > Computer Science > Operating Systems

## Customer Reviews

The book is a great introduction to system design issues that are only taught at few courses in few universities. even-though they show up in computer systems everywhere. This is a very good and easy read for any one in computer industry . it describes all parts of computer systems and how they interact very well. The extension of the book is online and many chapters are available for free to download.The chapter on Naming is worth the money of the book. I have not seen the discussion of naming in such detail and simple terms anywhere,The authors are very well respected professors at MIT and have experience in operating systems and computer system since its early days.I highly recommend this book to any hardware or software student or professional engnineer.

Actually, I can see the authors’ attempt to make it a "clear, structured" read, but they failed miserably. One of the most unpleasant technology books I had to deal with. At first it produces an impression of a well structured work with "what’s ahead, how this chapter is organized, how that" - but that is all the authors are good at in terms of writing - organizing their outline. They fail terribly at being clear and easy on the reader. Two stars only for a lot of italicized words (definitions) - good idea, but otherwise wanted to give it just one star.

This book provides an essential collection of design considerations for anyone who is tasked with designing, refactoring, or planning systems of computing technology.

I feel like the content is decent, It is hard to absorb all the information without being hands on. a HARD read cause its quite boring.

Some of the topics discussed in this book were truly helpful to my knowledge of systems design - the emphasis on Modularity, for instance, has instilled in me the importance of designing code so that I don’t end up with a pile of spaghetti. I personally think that the book would be so much more helpful to the CS student if it offered some practice problems that actually have to do with code. Or

else you’re simply reading material that’ll be too difficult to retain afterwards.



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