Operating System Concepts
(Windows Xp Update)

Operating systems are large and complex, and yet must function with near-absolute reliability—that's why they're a class unto themselves in the field of software development. Since its first release 20 years ago, the dinosaur book—Operating System Concepts by Abraham Silberschatz, Peter Baer Galvin, and Greg Gagne—has been a valuable reference for designers and implementers of operating systems. The newly released sixth edition of this book maintains the volume's authority with new sections on thread management, distributed processes, and the Java Virtual Machine (JVM). There's also information on the workings of the latest crop of operating systems, including Microsoft Windows 2000, Linux, FreeBSD, and compact operating systems for handheld devices. This book is concerned with the design of operating systems, which is to say it enumerates the problems that pop up in the creation of efficient systems and explores alternative ways of dealing with them, detailing the advantages and shortcomings of each. For example, in their chapter on scheduling CPU activity, the authors explain several algorithms (first-come, first-served, and round-robin scheduling, among others) for allocating the capacity of single and multiple processors among jobs. They highlight the relative advantages of each, and explain how several real-life operating systems solve the problem. They then present the reader with exercises (this book is essentially a university textbook) that inspire thought and discussion. --David Wall

Topics covered: The problems faced by designers of system software for electronic computers, and strategies that have been developed over the past 20 years to address (and, in some cases, solve) them. Problems of CPU scheduling, memory allocation, paging, processes and threads, storage management, distributed processes and storage mechanisms, and security are all discussed thoroughly and with many authoritative references.

My Personal Review:
This is a review of the 5th and 6th editions of Operating Systems Concepts, by Avi Silberschatz and Peter Galvin; Greg Gagne was their co-author on the 6th edition. More recent editions are available which I havent yet read. For readers of this review, the main advantage of the 5th and 6th editions is that you can buy them very cheaply here on Amazon.com from a 3rd-party bookseller. For example, at this very moment, I see that a used copy of the 6th edition can be picked up for only $2.48 before shipping and handling. That is the bargain of year! If you can afford a newer edition, by all means, go for it.

Anyway, even in spite of their having been superseded by more recent editions, the 5th and 6th editions are each an excellent introduction to operating systems concepts. It is to be hoped that CIS and MIS majors will use this book in their introductory course on operating systems, instead of a book that focuses only on Windows. IT, MIS and networking professionals whose only experience with operating systems has been the desktop and/or server version of Microsofts or Apples OSes, or Linux, should also read -- and re-read -- this book. It will make them more well-rounded professionals and enable them to recognize and intelligently consider issues that need to be looked at from an operating systems perspective. Other professionals will benefit from reading (and re-reading this) this book too. For example, product managers at telcos who make product catalog decisions about routers, PBXes, smartphones, or any other equipment that runs an operating system, will benefit from this book too, since it will enable them to factor operating system considerations into their decision-making process.

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