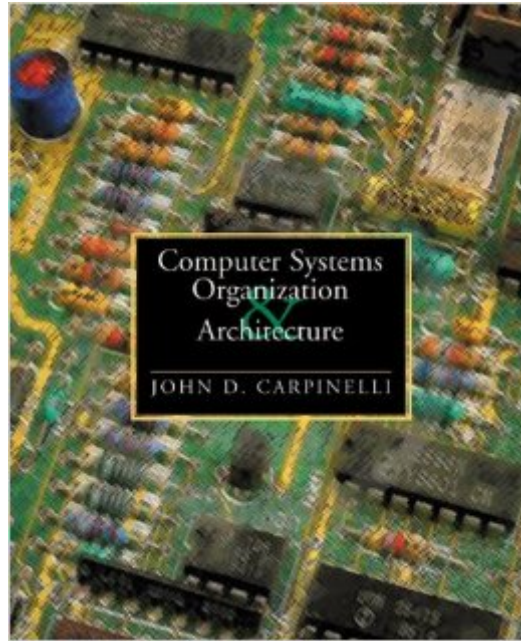


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# Computer Systems Organization And Architecture



## Synopsis

This book provides up-to-date coverage of fundamental concepts for the design of computers and their subsystems. It presents material with a serious but easy-to-understand writing style that makes it accessible to readers without sacrificing important topics. The book emphasizes a finite state machine approach to CPU design, which provides a strong background for reader understanding. It forms a solid basis for readers to draw upon as they study this material and in later engineering and computer science practice. The book also examines the design of computer systems, including such topics as memory hierarchies, input/output processing, interrupts, and direct memory access, as well as advanced architectural aspects of parallel processing. To make the material accessible to beginners, the author has included two running examples of increasing complexity: the Very Simple CPU, which contains four instruction sets and shows very simple CPU design; and the Relatively Simple CPU which contains 16 instruction sets and adds enough complexity to illustrate more advanced concepts. Each chapter features a real-world machine on which the discussed organization and architecture concepts are implemented. This book is designed to teach computer organization/architecture to engineers and computer scientists.

## Book Information

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## Customer Reviews

I was forced to buy this book for my Architecture class. I really regret wasting my money on it. In short, the book [stinks]. It assumes too many things. It does not do a very good job explaining some important pieces of information. For the most part, the student will spend the whole time trying to

make sense out of what the author is saying. It is one of these "should've..could've" books! If you are looking for an architecture book, I wouldn't recommend this one.

$a = b, c, \text{ and } d.e = f, g, \text{ and } h.b > e \text{ while } a < f.ac < gh \text{ while } fh < bd.c$  can be diagrammed in this box if you use  $h.g$  is shown in this truth table if you use  $a$ . Part of what makes this text so difficult to understand is the author's inability to use consistent terms while trying to explain material. In the first chapter, a simple And gate is referred to as 'AND', ' $x^y$ ', ' $x.y$ ', ' $xy$ ', ' $()()$ ', and 'and'. All true, but used interchangeably while trying to explain makes the concepts incredibly difficult to decipher, particularly when variations for representing other boolean concepts are added to the fray. The best part of the book, as far as I can tell, is that the key terms are in bold so I know what to plug into Google to try and figure out what it is.

I used this book for an undergrad Architecture course. I had a great teacher, and we only looked at certain sections in the book. There is an awful lot to cover in a single semester. The book is written for students with very little formal electronics knowledge, but you do need to know some basic logic and hardware concepts. It is based on the i86 architecture, making generalizations where possible. If you have a strong background, or want to learn very detailed concepts - then there are better choices. Sometimes this book over-simplifies concepts to reach its intended audience. I later found the book useful as a reference tool in a graduate architecture class. Especially the sections on memory - cache, virtual, pagefiles, etc.. Even though my grad class was on the MiPS architecture, the concepts are the same. Overall, this was a decent text for an undergraduate course. As other reviewers, (good and bad) have noted - when you are learning, you should always use additional references. Don't depend on this book alone to teach you.

It's a book a student can read. Written very well, with examples and easy to hard problems to master the topic. If you need to learn about this subject, one can basically teach themselves with this book. It's written for college students. But it, you will not regret it. Trust me.

"Concepts are not explained in a thorough and meaningful way, sometimes not at all. Logical progression (ability to connect concepts) is very poor." Perfect description. This text is very convoluted and does not do a good job of presenting the topic to the reader. A six minute youtube video gives a better and more concise view of topics I spent hours learning in this book. Hopefully it will be a good reference later on.

The first chapter is the most important in the book. And yet it is riddled with poor grammar, truth table errors, no answers to questions in the back of book etc. I don't understand how someone who understands the subject can convey so little meaningful information. Actually I do understand, and this book's academic blasphemy should be burnt black as ruined toast. Money down the drain, as Ricky Ricardo "splained" things to Lucy at a much higher level. This book leaves me bitter if you hadn't noticed.

Most of the other 1-star reviews have covered the outstanding deficiencies of this text. I am 3/4 of the way through this book. It is the second course I have taken that used this text. It is thoroughly inconsistent. Concepts are not explained in a thorough and meaningful way, sometimes not at all. Logical progression (ability to connect concepts) is very poor. It is at times impossible to solve the problems at the end of the chapter because they lack enough detail to understand what is actually required. I am not a lazy student who is mad about my bad grade. I got an A in my previous course and am on track to get another; however, it has required A LOT more work than any other courses - mainly because of the terrible text. Please avoid this text if you possibly can!!!

I was forced to buy this book for class and it is terribly written and full of errors. If you want to learn, this is not a good book as you will spend more time deciphering what the author is saying than actually learning. You should either buy this book if you have a good professor and you need a book to help you review for exams or if you have troubles sleeping at night. I have fallen asleep twice in the last hour and a half reading this book.

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