

Book Review:**Distributed Computing: Principles and Applications**

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Such as the author states in the first pages, this book is the result of several years of teaching the involved topics at the California Polytechnic State University (Cal Poly), San Luis Obispo, California, U.S.A, to undergraduates. This characteristic can be observed in the organization of the book, in each of the chapters, and in the "hands-on" orientation of each of the presented topics.

The organization/order of chapters is adequate, though in some cases chapters not necessarily and straightforwardly related to the topic are introduced and/or interspersed. Nevertheless, this by no means conceals contents; at the most, it may entail a distraction in the development of the topics. Even though chapter 1 is clearly enough in the presentation of the concepts needed and assumed as known in the rest of the chapters, they are not mentioned again in the presentation of the subsequent topics (which are typical of distributed computing) and they could work as contextual framework to each of the new topics.

Unlike other books which deal with processing in distributed systems, relatively classical topics in this book-such as synchronization or transactions- are neither presented nor analyzed. However, different computing paradigms in distributed systems are indeed presented and analyzed, which is really useful from the software development perspective in general. Since we are talking about a book oriented to undergraduate courses, each of the topics presents one or several examples of different complexity and/or abstraction levels, and this is what makes it especially attractive, when we are to understand concepts. Even though the dependency of examples on Java language is really strong, it does not present many problems to university students, since Java is generally known and used in university courses given before those of distributed computing. In fact, the material provided both by the book author and the editorial is really useful for teaching.

As summary, the topics presented by chapter are:

Chapter 1: The concepts required for the rest of the book are enumerated. It could also be used to place the general topic of the book (distributed computing) within the context of university course of studies, and to have all the necessary previous topics in mind.

Chapter 2: The idea of communication among processes (including some communication syntax and semantics) is presented, together with the relation of this communication to some specific protocols.

Chapter 3: Different software forms or architectures for distributed computing are analyzed. A simple application is taken as reference, and it is described in function of each of this architectures.

Chapter 4: Sockets API is presented - it can be regarded as a particular chapter of the concepts seen in network and data communication courses.

Chapter 5: The ideas surrounding the client-server architecture are presented. The content is clear and shows the different alternatives in function of communication mechanisms among processes.

Chapter 6: The different multicast forms are analyzed, and the chapter presents good examples in Java language. Examples are directly related to multicast IP addresses and Java implementation over these addresses.

Chapter 7: It generally explains the idea of distributed objects, initially compared to communications using message passing.

Chapter 8: It can be considered as a detailed advance of the previous chapter, presenting all what is related to Java RMI (Remote Method Invocation). It also presents an advance in techniques specific to Java RMI.

Chapter 9: It presents a quite general description of Internet applications, from the used protocols to details in client/server applications discriminating between the code running in the server and that running in the client.

Chapter 10: It presents a general description of CORBA and Java-related details.

Chapter 11: It is considered as a continuation of chapter 9, increasing the level of detail, which includes, for instance, SOAP (Simple Object Access Protocol).

Chapter 12: It shows other distributed computing alternatives, such as message queue system, mobile agents, Network services, and object spaces.

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