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*by Brad Eden*

The vocabulary of computers and network technology is one that only the initiated seem to be able to understand. Mark Norris has compiled a dictionary of common abbreviations, concepts, terms, and technologies currently in use in the area of computer science. It is intended to assist anyone involved in this area, either as a specialist or a generalist, in understanding network technology. In a section after the dictionary, "Trends in Information/ Technology," the author attempts to describe where technology is headed in the areas of computer users, computers, network technology, and the Internet.

As a generalist, I found the dictionary helpful. Network technology and terms are often a hindrance to understanding the field, and those who are not members of the "inner circle," or are unable to continually maintain currency in this field, will find this a helpful reference work. The definitions are given in a straightforward, user-friendly manner and are approachable, as opposed to scholarly.

Unfortunately, one of the problems with current publishing procedures is that books often appear two to three years after an author has finished the final draft of the manuscript. In this case, this is apparent in the "Trends in Information/Technology" section. Most of the graphs indicate that the author's latest facts are from 1994, causing concern about the currency of the information. While trends in computer science do not need to be exactly accurate, it is difficult for readers to trust information that is almost three years old by the time they buy the book. Again, this is not the fault of the author, but of current publishing time lines. If you are looking for a fairly understandable dictionary of network technology terms, however, this book may be what you are looking for.

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*by Bruce Gilbert and Jeff Nelson*

The Java Tutorial is part of the "Java Series," published under the auspices of Sun Microsystems. This "tutorial" is comprised of 830 pages of programming explication and examples, as well as a CD-ROM which contains a number of examples of Java code and Version 1.0.2 of the Java Development Kit (JDK). The CD-ROM that came with the review copy reportedly was compatible with Macintosh System 7.5 (which worked fine) as well as Solaris 2.3, 2.4, or 2.5 (which we did not test). It also purportedly works with Windows 95 and NT, but NT users should note that Version 4.0 of NT is required; our Version 3.51 NT machine could not load this.

The CD-ROM that comes with this book does have a number of goodies, from the JDK (still, as of this writing, pretty much up to date-- Version 1.0.2, although a beta version of 1.1 is available on the Internet) to a "lite" version of Code Warrior. Although Version 1.1 represents a major update of the JDK, most of what is contained in this tutorial should still be of value.

As we noted, from the Mac side, everything seemed to work quite well. The CD-ROM also contains some example source .java, as well as compiled .class, files.

Much, if not all, of this book is available on the Internet in HTML format (<http://java.sun.com/books/Series/Tutorial/book.html> (<http://java.sun.com/books/Series/Tutorial/book.html>)). The book existed in its early stages as an Internet-accessible document so that Java "customers could learn Java before any books were on the market." (p. vii) Thus, the HTML version existed before the print version, and the print version reflects in a great many ways its hypertext roots (right down to the underlining of cross-references).

The audience of this book is, according to the book itself, not necessarily the novice user. "[We] assume that you have some programming experience ... and are familiar with programming tenets, terminology, and at least one high-level programming language." (p. xii) As we shall see later, this is probably understating the technical proficiency required of the reader. "New programmers will want to read the book from beginning to end ... no matter what type of programmer you are, you will find a path through this book that fits your learning requirements." (p. xii)

A relatively novice programmer might find the "beginning to end path" to be more than a little daunting. Quite early on, for example, one finds a clarifying note such as this:

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To declare variables that are members of a class, the declaration must be within the class body, but not within the body of a method. Variables declared within the body of a method are local to that method. (p. 45)

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Plowing through more than one hundred pages of this kind of verbiage before the first discussion of how to write an applet probably doesn't really fit the "learning requirements" of a novice programmer whose previous experience is only with non-object programming languages such as BASIC or COBOL.

People with zero, or next to zero, programming experience will probably want to look elsewhere, if what they really want to do is simply pick up a little proficiency in Java, and knock out some applets. (It must be stressed that learning a little Java is, at this point, much more difficult than learning a little HTML, both in assimilation and execution). Such "rank beginners" might want to start with titles such as:

van Hoff, A., Shaio, S., & Starbuck, O. (1996). *Hooked on Java: Creating Hot Web Sites with Java Applets*. Reading, MA: Addison- Wesley.

Walsh, A. (1996). *Java for Dummies*. Foster City, CA: IDG Books.

For this book, we would suggest, as a minimum, prior experience in a procedure-based language, preferably C. Experience in an object-oriented language would be helpful, especially due to the extensive object-based dialogue. If you have programmed in C++ to any extent, you're halfway home; your main task will be to learn the syntax of the Java language and Sun's underlying framework (e.g., the AWT or Abstract Windowing Toolkit), and you should find this book very helpful in that regard. Those with a knowledge of C only, should also find this book useful, if object-oriented design is a familiar concept. However, those programmers without knowledge of C++ style coding or object orientation might do well to seek a book with stronger emphasis on basic concepts.

We found this book most useful in the numerous examples provided. In particular, the GridBagLayout layout manager has been neglected by other Java books. This layout manager is potentially both useful and robust, and we were pleased with the thoroughness and clarity of discussion that this topic received.

The book closes with more than two hundred pages of examples of Java code; topics covered include writing applets and applications, networking security, and integrating native programming methods. This wealth of examples is the book's strong point. Those who have the necessary programming background, and who are ready to take the Java "plunge," are likely to find much to like in this volume.

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*by Amy Shannon*

The many Internet how-to books I have read or browsed through have all been lacking in their ability to relate to my needs. Books claiming to meet the needs of scientists usually are of a generic format, with a few science examples thrown in. Although guides for the Internet instructor are available, few have been able to speak to both the instructor and the student, while going beyond beginner material. A notable exception to these trends has been provided by Clement's Science and Technology on the Internet Plus.

Clement clearly understands the process of science. The meat of the book, Section A, is a series of modules designed around tasks common to scientific communication, such as conferencing, finding colleagues, searching the literature, participating in electronic publishing, and sharing data. Each type of task is dealt with separately, with plenty of examples provided. Descriptions are understandable, but they don't talk down to the beginner. Much-needed discussion on the quality and reliability of Internet resources is provided. Exercises provided with each task module cover the range of technology available. For example, the module on finding news and current information includes exercises using Usenet, Gopher, WAIS (Wide Area Information Service), FTP (File Transfer Protocol), and the World Wide Web. The focus on task, rather than tool, is extremely effective.

Section B is composed of a series of fact sheets. These are two-to-three page descriptions of each of the tools used. This section, along with the list of Internet sites in Section C, comprise a useful, if not too detailed, reference.

This book is designed to be used as a textbook. It is available in two versions: the "Plus" version, which I reviewed, and a student version. The Plus version includes additional notes for the teacher, a sample workshop outline, and electronic and camera-ready copies of lecture overheads. The workshop outline provided is a useful addition for instructors struggling to put together an Internet class for the first time; however, the amount of material to be covered in a four-hour time line is a bit ambitious. In a future edition of the book I would like to see the addition of examples to the selection of overheads.

Overall, Clement's book does the best job that I have seen in teaching the Internet for scientists. Its language, scope, and format are completely on target for its audience. The only real complaint I can muster is that the WWW examples are all given in Lynx. Although a graphical connection is not available to everyone, the opportunities provided by a superior WWW browser should be better represented.

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*by Kate Wakefield*

To some, this book may have a strike against it simply due to the author's choice of punctuation for the shorthand version of "electronic mail." However, since respected critics have argued long and loud about whether to include the hyphen in "email" (and "online," and other staples of geek speak), this critic has vowed not to dwell on the issue. (This term has evolved over time, so the early imprint may help to explain this choice of usage.)

This handy introduction to LAN (local area network) email software is recommended reading for mail administrators, and is useful for those seeking background information on networking and mail. The main drawbacks are the book's rapidly aging, and British, imprint (which leads to a list of vendors with only United Kingdom mailing addresses and phone numbers, among other oddities). In the standards world, three years is a very long time. Given the 1995 publishing date, much of this information would have been gathered in 1994. (How many Web-years would that be?) As a result, this book does not spend nearly as much time on Internet mail and related standards as it should to be current with today's users.

The audience which will find this book most useful is local area network administrators who are selecting a LAN email package for the first time, or those who may be contemplating a change to new email software. A mid-level manager who is trying to convince upper management of the value of the organization-wide implementation of email will also find handy ammunition. Finally, interested email users will be able to use this as a basic text to pull together many related networking concepts. If you keep in mind that many of the reported difficulties with particular software packages may have been rectified in the intervening years, you can obtain valuable product comparisons.

The book begins with an overview of email, including a section on the benefits of electronic communication. Workgroup software such as Lotus Notes is also briefly described. The book has stayed contemporary despite its aging imprint date due to its efforts to indicate the leading edge for email, such as mail-enabled applications. The predictions are, for the most part, right on target and are still informative. The book also has an excellent overview of network topologies (chapter seven) and email storage methods (chapter two). Chapter two clearly outlines advantages and disadvantages of directory-based servers and those which use a database model.

Chapter three focuses on email standards, introducing relevant standards organizations, and providing concise definitions of competing and overlapping standards such as: Microsoft's MAPI (Messaging Application Program Interface), VIM (Vendor Independent Messaging), Novell NetWare's MHS (Message Handling Service), X.400 / X.500 / XAPI (X.400 API), and SMTP (Simple Mail Transfer Protocol), plus brief introductions to fax and Internet gateways. Unfortunately, MIME (Multimedia Internet Mail Extensions) rates only a one-sentence mention in this chapter, due to this book's short shrift for Internet-connected mail and complete disregard for UNIX-based mail solutions.

Chapters four and five are excellent resources for LAN email administrators. Chapter four, "Planning Your E-mail Installation," brings up key issues such as who will be using email and where they will be located, and describes online versus store-and-forward technology. This chapter also includes quite a good buyer's checklist which helps planners create a comprehensive requirements list. Chapter five, "E-Mail Management," gives tips on planning for equipment needs (including issues such as LAN traffic and the potential need for LAN segmentation), protection of data (Uninterruptible Power Supplies and backups), and email server administration. For instance, it warns to check for "dead mail," describes the problem of corrupt mail databases, and covers the need to reclaim space in the database. This chapter should be required reading for any mail system administrator, no matter what his or her experience.

The book is sprinkled throughout with screen captures from a variety of LAN-based email packages, illustrating basic concepts and comparing features. Chapter eight describes several popular LAN email packages in more detail, comparing their features and placing them in the topologies described earlier in the book. The packages covered include several of the most popular Windows products: Finansa WinMail, Microsoft Mail 3.2, Lotus cc:Mail 2.0, daVinci 1.8, Lotus Notes 3.0 and WordPerfect Office 4. Notably missing are Qualcomm's Eudora, Pegasus, and any mention of Macintosh mail servers.

If your site uses any of these software packages, you'll notice immediately that these versions are several releases out of date (e.g., cc:Mail version 8 is expected in April 1997). This book would benefit immensely by being updated to include more current versions of the packages demonstrated. The basic concepts learned in this book, however, will allow you to ask mail software vendors better questions as you make email purchase decisions. The book also assists current mail system administrators in understanding the potential shortcomings and history of their particular mail system.

The book concludes with chapters on accessing mainframe-based mail, enterprise-wide email, email connectivity, and intelligent email (basically filters, rules, and message management). These chapters will provide useful nuggets to mail administrators, or any sophisticated user wishing to understand how mail works. Brief sections on network interoperability, connecting personal computers to multiple LANs, and network connections introduce users to basic Internet hardware, such as routers and bridges. ISDN (Integrated Services Digital Network), ATM (Asynchronous Transfer Mode), and dialup access are also mentioned.

The book concludes with a chapter on the importance of training, both for administrators and users of email. Useful tips on what should be covered and how to present the information in a meaningful way are offered. This section would be especially useful for a technical person who has been asked to present training for the first time to a non-technical audience. Larger corporations may have multiple sites with small numbers of technical staff. Coping strategies are recommended for this situation, and a list of items to cover with local mail administrators or "user managers" is given. The email administrator is exhorted to create documentation on how to recover from a major system crash, and to train several staff in the basics of system recovery. As you know if you've ever had even a small email service outage, the users' screaming will increase in volume each hour the system is down, resulting in a horrible experience for an administrator who has not planned for contingencies.

Most libraries and corporations in the United States now recognize the need for email (and the World Wide Web), and are simply looking for the best alternative to implement it. Most PC mail packages which are integrated with Internet applications use a combination of POP mail (Post Office Protocol) and SMTP. This is a valid enterprise-wide option LAN administrators will want to consider, in addition to those covered in this book. Perhaps the publisher will see fit to update this book with a new edition which covers more of these topics--although that would be a major undertaking, it would improve what is now a very good book to the outstanding level.

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