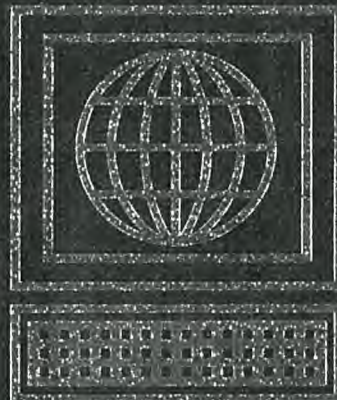




# Dictionary of Computer and Internet Terms

Seventh Edition



- More than 2500 key computer terms with definitions
- Includes hundreds of words and expressions that apply specifically to the Internet
- User-friendly descriptions of programming concepts, desktop and other applications, and much more
- Filled with illustrations

Douglas Downing, Ph.D., Michael Covington, Ph.D., and  
Melody Mauldin Covington

# Dictionary of Computer and Internet Terms

Seventh Edition

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Barron's Educational Series, Inc.  
250 Wireless Boulevard  
Hauppauge, New York 11788  
<http://www.barronseduc.com>

*Library of Congress Catalog Card No. 99-35913*

International Standard Book No. 0-7641-1265-1

### Library of Congress Cataloging-in-Publication Data

Downing, Douglas.

Dictionary of computer and Internet terms / Douglas A. Downing,  
Michael A. Covington, Melody Mauldin Covington--7th ed.  
p. cm.

First-4th eds. published under title: Dictionary of computer  
terms.

ISBN 0-7641-1265-1

1. Computers--Dictionaries. 2. Internet (Computer network)--  
Dictionaries. I. Covington, Michael A., 1957-- II. Covington,  
Melody Mauldin. III. Downing, Douglas. Dictionary of computer  
terms. IV. Title.

QA76.15.D667 2000  
004'.03--dc21

99-35913  
CIP

PRINTED IN THE UNITED STATES OF AMERICA

876543

Network System Technologies Ex. 2015  
Qualcomm v. Network System Technologies - IPR 2024-00343

**address**

1. a number or bit pattern that uniquely identifies a location in a computer memory. Every location has a distinct address.
2. a letter and number identifying the column and row of a cell in a spreadsheet. *See* RELATIVE ADDRESS; ABSOLUTE ADDRESS.
3. a set of numbers identifying a machine on the Internet; *see* IP ADDRESS.
4. an electronic mail address. *See* ELECTRONIC MAIL; INTERNET.
5. a URL identifying a web page. *See* URL.

**ADM-3A** a type of computer terminal marketed by Lear Siegler in the early 1980s. Its codes for controlling the screen were adopted on a few other terminals and early microcomputers.

**Administrator** the account name used by the system administrator under Windows NT and 2000. *Compare* ROOT.

**Adobe Systems, Inc.** (San Jose, California) the software company that pioneered the PostScript command language for output devices. Adobe is also a leader in producing high-quality fonts and graphics software, including Adobe Type Manager (ATM), Photoshop, Illustrator, and PageMaker (for both Macintosh and PC platforms). For digital video production Adobe markets Premiere and After Effects. Also of interest is Adobe Acrobat—a program which allows electronic distribution of formatted documents. (*See* PDF.)

For further information about Adobe and their products, you can reach their web site at <http://www.adobe.com>. *See also* POSTSCRIPT; ATM; DESKTOP PUBLISHING; PORTABLE DIGITAL DOCUMENT; TYPE 1 FONTS.

**Adobe Type Manager** *see* ATM (definition 1).

**ADSL** (Asymmetric Digital Subscriber Line) a type of high-speed digital telephone connection used mainly for systems that involve digital video. It supports data rates of 6 million bits per second in one direction and 576 kilobits per second in the other direction. *Contrast* ISDN; T1 LINE; CABLE MODEM; DSL.

**adventure game** a computer game in which the user finds a path through a set of "rooms" that are described verbally or graphically, manipulating objects along the way (Fig. 6). The computer responds to simple commands in English. The first adventure game is said to have been invented by Will Crowther in the 1970s.

Adventure games provided the foundation for MUD and other sophisticated user interfaces. *See also* VIRTUAL REALITY.

**adware** software that is distributed free in order to advertise a product. *Compare* SHAREWARE, FREE SOFTWARE.

**AF** (audio frequency) a frequency within the range of human hearing, 20 to 20,000 hertz. *Contrast* RF.

**chain letter** a message that is intended to be forwarded from each recipient to as many others as possible. On the Internet, chain letters are very unwelcome because they waste money; the cost of delivering e-mail is borne by the recipient's site. Many chain letters perpetrate hoaxes or pyramid schemes (*see* HOAX; PYRAMID SCHEME).

**channel**

1. a radio frequency or communication path (e.g., a TV channel).
2. a high-speed data communication device used to interface IBM mainframe computers with input-output devices.
3. in desktop publishing, a set of images that will compose the final image when combined. The most common use for channels is the representation of the CMYK color separations in a paint program. Each color has its own channel.

Sometimes channels can be used like layers in a DRAW PROGRAM. Selected areas can be saved to a new channel, manipulated separately from the rest of the image, and later recombined with the main channel.

4. a discussion forum in Internet Relay Chat or a similar service. *See* IRC; CHAT ROOM.

5. a web page that is constantly updated, so that viewing it is like watching a television channel. *See* CASTANET; PUSH (definition 2).

**character** any symbol that can be stored and processed by a computer. For example, A, 3, and & are characters. The ASCII coding system is one way of representing characters on a computer. *See* ASCII; ANSI (definition 3); EBCDIC.

**character set** the set of characters that can be printed or displayed on a computer. For examples *see* ASCII; ANSI; IBM PC; UNICODE; EBCDIC.

**character string** a series of characters, such as "JOHN SMITH" or "R2D2". *See* STRING.

**charge-coupled device** *see* CCD.

**chat room** an electronic forum in which users can communicate with each other in real time. Chat rooms are found on the Internet (*see* IRC) and on on-line services such as CompuServe and AOL.

**check box** a small box (in a window) that the user can turn on or off by clicking with the mouse. When on, it displays an X or check mark in a square; when off, the square is blank. Unlike option buttons, check boxes do not affect each other; any check box can be on or off independently of all the others.



FIGURE 69. CUSP NODE

**cyan** a vivid greenish-blue color that is one of the standard printing ink colors. *See* CMYK.

**cyber-** (*prefix*) *see* CYBERNETICS.

**cybernetics** the study of the processing of information by machinery, especially computers and control systems; derived from Greek *kybernētēs* meaning "helmsman"; first conceived in the 1940s. Cybernetics has evolved into computer science, operations research, and a number of other fields. The prefix *cyber-* on numerous computer terms is derived from this word.

**cyberpunk** an antisocial person who uses computers as a means of self-expression, often performing destructive acts; also a genre of science fiction dating from William Gibson's 1982 novel *Neuromancer*.

**cyberspace** the part of human society and culture that exists in networked computer systems rather than in any particular physical location. For example, cyberspace is where most bank accounts and electronic messages reside.

**cyberbia** (cyber suburbia) the community of computer users that exists in cyberspace. *See* CYBERSPACE; NETIZEN.

**cycle** one oscillation of a computer's CPU CLOCK; the shortest step into which computer actions can be divided. When two or more programs are running at once, they are said to be competing for cycles.

**cyclical redundancy check** *see* CRC.

**cylinder** *see* DISK.

**Cyrillic** the Russian alphabet. Contrast LATIN.

**Cyrix** a manufacturer of microprocessors, including the 5x86 and 6x86, which are compatible substitutes for Intel's 486 and Pentium. (*See* MICROPROCESSOR.) Cyrix is now part of VIA Technologies. Their web address is [www.viatech.com](http://www.viatech.com).

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## D

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**DAC, D/A converter** *see* DIGITAL-TO-ANALOG CONVERTER.

**daemon** (under UNIX) a program that runs continuously in the background, or is activated by a particular event. The word *daemon* is Greek for "spirit" or "soul."

**dagger** the character †, sometimes used to mark footnotes. *See also* FOOTNOTE. Also called an OBELISK or LONG CROSS.

**daisy-chain** to connect devices together in sequence with cables. For example, if four devices A, B, C, and D are daisy-chained, there will be a cable from A to B, a cable from B to C, and a cable from C to D.

**daisywheel printer** a printer that uses a rotating plastic wheel as a type element. Daisywheel printers were often used with microcomputers in the early 1980s. They printed high-quality text, but they were relatively slow and could not print graphics.

**dash** (—) a punctuation mark similar to a hyphen, but longer. On a typewriter, a dash is typed as two hyphens. (In WordPerfect, it should be typed as two required hyphens, so that a line break will not be placed between them; *see* REQUIRED HYPHEN.)

Proportional-pitch type often includes one or more kinds of dashes, such as an em dash (—), which is as wide as the height of the font, and an en dash (–), which is two-thirds as wide as the em dash. Normally, the em dash joins sentences and the en dash joins numbers (as in "1995–98").

**data** information. The word was originally the plural of *datum*, which means "a single fact," but is now used as a collective singular. Data processing is the act of using data for making calculations or decisions.

**database** a collection of data stored on a computer storage medium, such as a disk, that can be used for more than one purpose. For example, a firm that maintains a database containing information on its employees will be able to use the same data for payroll, personnel, and other purposes. *See* DATABASE MANAGEMENT.

**database management** the task of storing data in a database and retrieving information from that data. There are three aspects of database management: entering data, modifying or updating data, and presenting output reports. Many mainframe computers are used by businesses for database management purposes. Several software packages are available for database management on microcomputers, such as dBASE and Microsoft Access, and some data management capabilities are provided with spreadsheets such as Lotus 1-2-3 and Excel. Some examples of database applications include maintaining employee

Integrated circuits are mass produced by making many identical circuits at the same time from a single wafer of silicon. Each circuit must be individually tested, because a single defect in the crystal can completely ruin the circuit.

The ultimate integrated circuit is the microprocessor, which is a single chip that contains the complete arithmetic and logic unit of a computer, and sometimes other parts of the computer as well. *See* MICROPROCESSOR.

**Integrion** a company formed by IBM and leading banks to develop electronic home banking, available on the World Wide Web at <http://www.integrion.net>.

**Intel** the manufacturer of the microprocessors used in PC-compatible computers, although other companies also make compatible equivalents. Intel products include the 8088, 80286, 386, 486, Pentium, Pentium Pro, and Pentium II. *See* MICROPROCESSOR. Earlier, Intel developed the first microprocessors (4004, 8008) and the microprocessor for which CP/M was developed (the 8080, soon superseded by Zilog's Z80). Intel Corporation is headquartered in Santa Clara, California. Its web address is <http://www.intel.com>.

**interactive system** a computer system in which the user communicates with the computer through a keyboard and screen. The computer presents the results almost immediately after an instruction has been entered, and the user can type in new instructions after seeing the results of the previous ones. Nowadays, almost all computing is interactive. *Contrast* BATCH PROCESSING.

**interblock gap** a blank space on a magnetic tape between two adjacent blocks. The presence of the gap makes it easier to keep track of the locations of the blocks when the tape is started and stopped.

**intercap** a capitalized letter in the middle of a word. The word *PostScript* contains an example. The companies that have coined such trademarks contend that the unusual capitalization is part of the correct spelling of the trademark.

Not everybody accepts these unusual spellings. At one time there was a company that claimed the only correct spelling of its name was "en•vōs." Almost everyone printed it as Envos. The moral of the story is that names need not reproduce trademarks and logos. In fact, a company can be at a real disadvantage if it makes its name too hard to print — journalists may simply ignore it.

**intercharacter spacing** the spacing in between characters within words. Also called LETTERSPACING. *See* KERNING; TRACKING.

**interface** the connection between two systems through which information is exchanged. For example, in computer hardware, an interface is an electrical connection of the proper type. In software, it is a standard format for exchanging data. The USER INTERFACE of a piece of software

1. In Modula-2, routines can be compiled separately and linked at load time. Compiled units are called *modules*.
2. The `IMPORT` and `EXPORT` declarations control recognition of names. `IMPORT` means "Recognize names here that are declared in another module"; `EXPORT` means "Allow other modules to `IMPORT` names that are declared here."
3. Modula-2 allows the programmer to divide the program into concurrent tasks that run simultaneously. See *TIMESHARING*.
4. The `BEGIN` and `END` statements are used only to mark the beginning and end of the program. Within the program, each `IF`, `WHILE`, or `FOR` construct is terminated with an `END`. (As in Pascal, `REPEAT` is terminated with `UNTIL`.)
5. Each standard input-output statement handles only one item of a specific type. For instance, the Pascal statement  
`WRITELN ('The answer is ',A)`  
 is replaced by the sequence:  
`WriteString('The answer is');`  
`WritelnReal(A);`  
`WriteLn;`  
 This feature makes it easier for users to write their own replacements for input-output routines, but it also makes programs longer and clumsier.
6. As in PL/I, procedures can determine, at run time, the size of arrays passed to them as parameters. This makes it practicable to handle variable-length character strings.
7. The `CASE` statement has an `ELSE` clause (as it already has in most implementations of Pascal).
8. Upper and lowercase are distinguished throughout the program; reserved words must be entirely in uppercase, and names differing only in case (e.g., `WRITELN` vs. `WriteLn`) are not equivalent. An entire name is significant, not just its first eight characters.

Fig. 164 shows a sample program in Modula-2.

**module** a part of a larger system. A module in a computer program is a part of the program that is written and tested separately and then is combined with other modules to form the complete program. See *TOP-DOWN PROGRAMMING*.

**moiré** an unintended and distracting pattern that occurs when two or more halftone screens are overprinted at the wrong angle. See Fig. 165.

**monadic operation** an operation on one piece of data. For example, negation (finding the negative of a number) is an operation that requires only one operand and is therefore monadic. Addition is not monadic because it requires two numbers to be added. Contrast *DYADIC OPERATION*.

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## P

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**packet** a group of consecutive characters sent from one computer to another over a network. For an example, *see* XMODEM. On many local-area networks, all communications are in the form of packets that begin with labels indicating the machine to which they are addressed. *See* X.25.

**packet radio** the transmission of data (in packets) by radio. It is a fast-growing hobby among radio amateurs ("hams") and also has commercial applications as a way of linking computers without wires.

A typical amateur packet system consists of a computer linked by a terminal-node controller (TNC) to a VHF radio transmitter and receiver. The TNC constructs and recognizes packets. The packet radio protocol effectively prevents two systems from transmitting at the same time, and all data are error-checked. Packet systems are often used to run bulletin boards (*see* BBS). Unlike telephone-line BBSs, packet BBSs are inherently multiuser systems because each packet contains a label indicating its sender and receiver. Thus, the computer can keep track of many users concurrently.

Commercial packet systems often involve portable computer terminals carried by delivery or service personnel. The terminals are linked by radio to a main computer many miles away. *See also* AX.25.

**packet switching** a technique that enables many computers to share a single communication channel, such as a cable, by transmitting all data in packets which specify the machine to which they are addressed. *See* PACKET.

### page

1. a section of memory that is accessible at one time. *See* VIRTUAL MEMORY.
2. information available on the World Wide Web; *see* WEB PAGE; HOME PAGE.

**page fault** the situation that arises when the computer needs to access an area of memory that has been swapped out to disk. *See* VIRTUAL MEMORY.

**page frame** an indication of the edges of the paper displayed by your computer's software. The area around the page frame is called the *pasteboard*.

**page layout software** software specially designed for creating CAMERA-READY COPY. Page layout programs, such as PageMaker, QuarkXPress, and Corel Ventura Publisher, allow the desktop publisher to combine many separate files of different types into a specified design. These special designs, called TEMPLATES or STYLESHEETS, pro-

**PROM** (Programmable Read-Only Memory) a type of computer memory that can be programmed once but not reprogrammed. *See also* EPROM.

**promiscuous mode** a mode in which a computer reads all the data packets on the network, not just those addressed to it. *See* SNIFFER.

**prompt** a symbol that appears on a computer terminal screen to signal to the user that the computer is ready to receive input. Different programs use different prompts. For example, under most versions of DOS, the prompt is C> if C is the default disk drive.

In DOS, the PROMPT command can be used to change the appearance of the prompt. For an example, see HARD-DISK MANAGEMENT.

**prop** an object placed within the scene of an animation.

**properties** the attributes of any object. Under OS/2 and Windows, menus titled "Properties" are the usual way of changing settings. In Windows 95 and 98, right-click on an object to change its properties. For example, the properties of an icon specify what it looks like and what should happen when the user clicks on it.

**proportional pitch** the use of characters with different widths in a single typeface. For example, in proportional-pitch type, *M* is wider than *I*. Compared to a fixed-pitch typewriter or printer, this improves the appearance of the type and makes it more readable. Most books and newspapers are set in proportional type. *See* TYPE; TYPEFACE. For an illustration, *see* PITCH.

Because the letters are of different widths, it is not possible to count letter spaces in proportional-pitch type the way one does on a typewriter. *See* TYPESETTING MISTAKES.

**proprietary** owned by a specific company or individual. A feature of a computer is proprietary if one company has exclusive rights to it.

**protected mode** the mode in which an 80286, 386, 486, or Pentium microprocessor can access the largest possible amount of memory. In this mode, these processors can only run programs designed for protected mode, not programs designed for earlier processors such as the 8088. In Microsoft Windows and OS/2, the user can switch between protected mode (for running Windows or OS/2 programs) and real mode or multiple virtual 8086 mode (for running DOS programs).

In protected mode, different parts of memory are allocated to different programs, and memory is "protected" in the sense that a program can only write to the memory allocated to it. *Contrast* REAL MODE; MULTIPLE VIRTUAL MODE.

**protocol** a standard way of carrying out data transmission between computers. *See* HANDSHAKING; X-OFF; X-ON; XMODEM; KERMIT; HTTP; FTP; TCP/IP; NETBEUI; IPX/SPX; ATM.

**proxy** an item that represents something else. *See also* PROXY SERVER.

equivalent number of dots per inch depends on the size of the screen. Present-day video screens resolve about 80 dots per inch; they are not nearly as sharp as ink on paper.

A big advantage of draw programs, as opposed to paint programs, is that they can use the full resolution of the printer; they are not limited to printing what they display on the screen. However, some paint programs can handle very detailed images by displaying only part of the image at a time. *See* DRAW PROGRAM; PAINT PROGRAM; VECTOR GRAPHICS.

### resource

1. anything of value that is available for use. *Resources* can refer to computers on a network, preallocated memory blocks in an operating system, or money in a budget.
2. a modifiable part of a program on the Macintosh or under Microsoft Windows or OS/2, separate from the program instructions themselves. Resources include menus, icons, and fonts.

**resource leak** *see* LEAK.

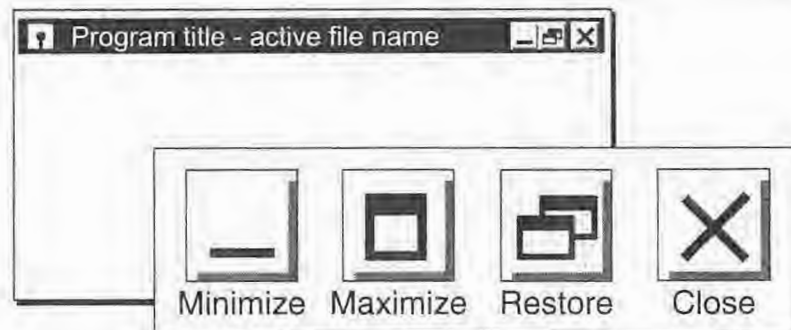


FIGURE 223. RESTORE BUTTON

**restore** to make a window go back to its previous size after being minimized or maximized. In Windows 95 and later, the restore button is to the right of the minimize button on the title bar and alternates with the maximize (full-screen) button. Or, right-click the application's icon on the taskbar; the top choice of the pop-up menu is "Restore."

*See also* WINDOW; MINIMIZE; MAXIMIZE.

**retouching** altering a photograph or illustration to eliminate flaws and unnecessary elements. The preferred software for this job is a PHOTOPAINT PROGRAM, which has the appropriate tools and FILTERS to seamlessly correct digitized photographs.

**retrocomputing** the hobby of preserving old computer technology, either by maintaining the machines themselves or by emulating them on newer equipment.

$\text{INT}(100 \times X + 0.5) / 100$  (unless the result is thrown off by *rounding error*; see next entry).

**rounding error** an error that occurs because the computer cannot store the true value of most real numbers; instead, it can store only an approximation of a finite number of digits.

If you wish to write  $\frac{1}{3}$  as a decimal fraction, you can approximate it as 0.33333333, but it would require an infinite number of digits to express it exactly. The computer faces the same problem except that internally it stores the numbers in binary, and it can lose accuracy in converting between binary and decimal. For example, 0.1 has no exact representation on a computer; if you add the computer's representation of 0.1 to 0 ten times, you will not get exactly 1. To avoid rounding error, some computer programs represent numbers as decimal digits. *See* BINARY-CODED DECIMAL.

**Route 128** a highway that skirts the west side of Boston, Massachusetts, passing through the cities of Needham and Waltham. Route 128 is the home of a number of computer companies, including Digital Equipment Corporation and Lotus. *See* DIGITAL EQUIPMENT CORPORATION; SILICON VALLEY; SILICON CREEK.

**router** a network component that joins several networks together intelligently. A router is more powerful than a bridge because instead of just choosing network segments based on previous traffic, a router can look up the best route to a distant site. The Internet relies heavily on routers. *Compare* HUB; BRIDGE; SWITCH (definition 2). *See also* DNS (definition 1).

**RPG (Report Program Generator)** a programming language developed by IBM in the 1960s in an attempt to simplify programming for business applications. RPG is based on the principle that most business computer programs have the same structure; a large file is read one record at a time, some actions are performed for each record (e.g., adding numbers to a running total, or perhaps writing an altered form of the record onto another file), and other actions are performed only at the end (e.g., printing out the totals). The RPG programmer specifies only the details of these actions, not the overall structure of the program.

Because RPG programming can be reduced to a fixed procedure for filling out forms, RPG was often the first programming language taught to trainees. However, RPG programs are markedly less readable than programs in other languages, and complex algorithms are difficult to express in RPG.

**RPM (revolutions per minute)** a measure of speed of rotation. For example, many newer hard disks rotate at 7200 RPM.

**RPN** *see* POLISH NOTATION.

**RS-232** an Electronics Industries Association (EIA) recommended standard for transmitting serial data by wire. This standard is now officially

**swap file** a file used for swap space. In OS/2, the swap file is named SWAPPER.DAT and changes size as needed (provided enough disk space is free). In Windows, the swap file is hidden and does not normally appear in directory listings. It can be either permanent, and fixed in size, or temporary, and varying in size. Permanent swap files give faster execution.

Besides the swap file used by the operating system, there are also swap files used by particular applications, such as CorelDraw. *See* SWAP SPACE.

**swap space** disk space that an operating system or program uses as a substitute for additional memory. *See* VIRTUAL MEMORY; SWAP FILE.



FIGURE 257. SWASH CAPITAL LETTERS

**swash** a capital letter with a decorative flourish. Swashes are best when used sparingly.

**swf** (Shockwave file) filename extension used by Macromedia Shockwave. *See* SHOCKWAVE.

### switch

1. in electronics, a device for interrupting or rerouting the flow of electric current.

2. in telecommunications and networking, a device for establishing connections between one location and another, doing the work of a telephone operator. For instance, on a computer network, a switch is a device that temporarily creates high-speed paths between different segments as they are needed. It works like a bridge, but faster. *See* BRIDGE. *Compare* HUB; ROUTER.

**switched line** an ordinary (POTS) telephone line on which you establish connections by dialing; the path actually taken by the signals need not be the same when you call the same number twice on different occasions. *Contrast* T1 LINE; T3 LINE; POTS.

**switching power supply** a power supply that regulates the voltage of direct current by switching it off and on very rapidly and then smoothing out the variations. Most computer power supplies are of this type. The advantages of a switching power supply are that it does not waste energy and does not require a heavy transformer, since the incoming AC is chopped to give a high frequency that can be handled by a smaller, lighter transformer. The disadvantage is that it produces radio-frequency interference (*see* RFI; POWER SUPPLY).

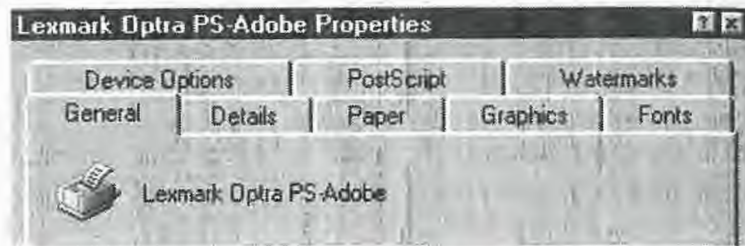


FIGURE 260. TABS IN DIALOG BOX

2. a visual indication of multiple pages in a dialog box. Click on the appropriately-labeled tab to get to the desired page.

**table** an arrangement of data in a database where each row defines a relationship between the items in that row. *See* RELATIONAL DATABASE.

**table, HTML** special HTML tags and commands for displaying tabular material. A web page can include various items arranged in a table by using the TABLE tag in HTML. Here is an example:

```
<HTML><HEAD><TITLE>Table Example</TITLE></HEAD>
<BODY>
<H2> HTML Table Example</H2>
<TABLE BORDER>
<TR><TD>President</TD><TD>Years in Office</TD>
    <TD>Home State</TD></TR>
<TR><TD>George Washington</TD><TD>1789-1797</TD>
    <TD>Virginia</TD></TR>
<TR><TD>John Adams</TD><TD>1797-1801</TD>
    <TD>Massachusetts</TD></TR>
<TR><TD>Thomas Jefferson</TD><TD>1801-1809</TD>
    <TD>Virginia</TD></TR>
</TABLE>
</BODY></HTML>
```

The BORDER attribute automatically sets up a border for the table; the border can be set wider by specifying its width in pixels (BORDER=3). If no border is desired, simply delete the BORDER attribute.

Each row of the table is enclosed between the <TR> and </TR> tags, and each data item in the table is enclosed between <TD> and </TD> tags. The web browser will automatically line up the items correctly; it doesn't matter where the line breaks in the HTML code occur. Figure 261 shows how this table is displayed.

Be aware that recording a tape takes time — as much as several hours to back up 1 gigabyte. Also, each tape may need to be formatted before it is used; formatting a tape can take a couple of hours. Thus, tapes are not a practical substitute for disk drives.

Large mainframe computers use reel-to-reel tapes of a type that originated in the 1950s. Microcomputers use tape cartridges of various sizes.

**tape drive** a device that enables a computer to read and write magnetic tape.

**tar file** in UNIX, a collection of files made into one file with the **tar** (tape archive) program. (Nowadays, tar files are almost always stored on disk, not tape.) To extract the contents of a tar file, use the command:

```
% tar -xvf filename.tar
```

Unlike ZIP, **tar** does not compress files; thus, tar files are often compressed with another utility (such as **compress**, which adds .Z at the end of the filename). See ZIP FILE.

### target

1. the place to which information is copied (e.g., the “target disk” when copying disks); the opposite of *source*.
2. something that is being searched for (as when searching for a word in a document).

**task** a PROCESS; one of several computer programs that are executing concurrently.



FIGURE 262. WINDOWS TASKBAR

**taskbar** the area at the bottom of the screen in Windows 95 and its successors, containing the START BUTTON and a button for every program that is currently running. It also contains tiny icons for the speaker (volume control), clock, printer (if printing), fax modem (if active), and other specialized programs.

The taskbar is normally wide enough for one row of buttons, but you can widen it, shrink it, or move it to a different edge of the screen by dragging it with the mouse. If you can't see the taskbar, look closely to see whether it has been reduced to minimum width or moved to an unusual location.

**Task List** (Windows, OS/2) a menu of open (running) and minimized software, some of which may be hidden by overlaid windows. In Windows 3.1, the task list is accessed by pressing Ctrl-Esc. In Windows