Chapter 0  BASICS

application program (application)
Software tool that allows a computer to be used for specific purposes.

back-up copy
A copy of a file created as insurance against the loss of the original.

back-up media
Disks, CD-Rs, and other technologies to hold backup files and to save computer storage space.

button
A hot spot on a screen that responds to mouse clicks. A button can be programmed to perform one of many tasks, such as opening a dialog box or launching an application.

CD-ROM drive
A common optical drive in computers that can read data from CD-ROM disks.

CD-RW drive
A disk drive that can read and write on rewritable optical disks.

central processing unit (CPU)
Part of the computer that processes information, performs arithmetic calculations, and makes basic decisions based on information values.

click
The action of pressing a button on a mouse.

Clipboard
A word processing program text editing tool for temporarily storing chunks of text and other data.

copy
A word processing program text editing tool that allows you to make a copy of a set of words or data and place the copy elsewhere in the same or a different document.

cut
A word processing program text editing tool that allows you to delete a set of words or data; often used with the copy function to move text around.

diskettes (disks)
Small, magnetically sensitive, flexible plastic wafers housed in a plastic case, used as a storage device.

document
A file, such as a term paper or chart created with applications.

double-click
To click a mouse button twice in rapid succession.

drag
To move the mouse while holding the mouse button down. Used for moving objects, selecting text, drawing, and other tasks.

drag-and-drop
A word processing program text editing tool that allows you to move a selected block of text from one location to another.

DVD drive
An optical disk drive that can read high-capacity DVD disks.

electronic mail (email)
Allows Internet users to send mail messages, data files, and software programs to other Internet users and to users of most commercial networks and online services.

file
An organized collection of related information stored in a computer-readable form.

file compression
The process of reducing the size of a file so that you can fit more files into the same amount of disk space.

file decompression
The process of restoring a compressed file back to its original state.

Find
A command used to locate a particular word, string of characters, or formatting in a document.

find-and-replace (search and replace)
A word processing program text editing tool that allows you to make repetitive changes throughout a document.

folder
A container for files and other folders. Also called a directory.

font
A size and style of typeface.

formatting
The function of software, such as word processing software, that enables users to change the appearance of a document by specifying the font, point size, and style of any character in the document, as well as the overall layout of text and graphical elements in the document.

A rigid, magnetically sensitive disk that spins rapidly and continuously inside the computer chassis.
**ITGS - Computer Confluence Terms**

**hard disk**
- or in a separate box attached to the computer housing. Used as a storage device.

**hardware**
- Physical parts of the computer system.

**hyperlink**
- A word, phrase, or picture that acts as a button, enabling the user to explore the Web or a multimedia document with mouse clicks.

**URL (uniform resource locator)**
- The address of a Web site.

**user name**
- A one-word name that you type to identify yourself when connecting-logging in to a secure computer system, network, or email account. Sometimes called login name or alias.

**viruses**
- Software that spreads from program to program, or from disk to disk, and uses each infected program or disk to make copies of itself. A form of software sabotage.

**Internet**
- A global interconnected network of thousands of networks linking academic, research, government, and commercial institutions, and other organizations and individuals. Also known as the Net.

**keyboard**
- Input device, similar to a typewriter keyboard, for entering data and commands into the computer.

**memory**
- Stores programs and the data they need to be instantly accessible to the CPU.

**menu**
- An onscreen list of command choices.

**monitor**
- An output device that displays text and graphics onscreen.

**monospaced fonts**
- Fonts like those in the Courier family that mimic typewriters; characters, no matter how skinny or fat, always take up the same amount of space.

**mouse**
- A handheld input device that, when moved around on a desktop or table, moves a pointer around the computer screen.

**open**
- To load a file into an application program’s workspace so it can be viewed and edited by the user.

**operating system (OS)**
- A system of programs that performs a variety of technical operations, providing an additional layer of insulation between the user and the bits-and-bytes world of computer hardware.

**paste**
- A word processing program text editing tool that allows you to cut or copy words from one part of a document and place the copy elsewhere in the same or a different document.

**peripheral**
- An external device, such as a keyboard or monitor, connected via cables to the system central processing unit.

**personal computer**
- A small, powerful, relatively low-cost microcomputer.

**point size**
- A measure of character size, with one point equal to 1/72 inch.

**printer**
- Output device that produces a paper copy of any information that can be displayed on the screen.

**proportionally spaced fonts**
- Fonts that enable more room for wide than for narrow characters.

**sans-serif fonts**
- Typeface fonts in which the characters have plain and clean lines rather than embellishments at the ends of the main strokes.

**serif fonts**
- Typeface fonts in which the characters are embellished with fine lines (serifs) at the ends of the main strokes.

**Search**
- Looking for a specific record.

**search engine**
- A program for locating information on the Web.

**software**
- Instructions that tell the hardware what to do to transform input into output.

**spam**
- Internet junk mail.

**speakers**
- The personal computer peripherals that emit music, voices, and other sounds.

**typeface**
- All type, including roman, bold, and italics, of a single design, such as Palatino or Helvetica.

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Chapter 1

COMPUTER CURRENTS & INTERNET WAVES

The era covering most of the past ten thousand years, during which humanity lived mainly by domesticating animals and growing food using plows and other agricultural tools.

Software tool that allows a computer to be used for specific purposes.

Information in a form that can be read, used, and manipulated by a computer.

A device for expanding a laptop computer so that it has the power and flexibility of a desktop.

Allows Internet users to send mail messages, data files, and software programs to other Internet users and to users of most commercial networks and online services.

A computer that is embedded into a consumer product, such as a wristwatch or game machine, to enhance those products. Also used to control hardware devices.

A program, usually for special-purpose computers, stored on a ROM chip so it cannot be altered.

A portable computer small enough to be tucked into a jacket pocket.

Physical parts of the computer system.

A Web connection to another document or site, like the many that loosely tie together millions of Web pages.

The recent modern era, characterized by the shift from farms to factories.

The era of rapid advances in machine technology that began at the end of the eighteenth century and ushered in the industrial age.

A Web connection to another document or site, like the many that loosely tie together millions of Web pages.

The current era, characterized by the shift from an industrial economy to an information economy and the convergence of computer and communication technology.

Network computer or other Internet-capable device used in offices and homes.

Information taken in by the computer.

A chip containing hundreds, thousands, or even millions of transistors.

A global interconnected network of thousands of networks linking academic, research, government, and commercial institutions, and other organizations and individuals. Also known as the Net.

Non-PC devices such as set-top boxes that are connected to the Internet.

A self-contained intraorganizational network that is designed using the same technology as the Internet.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>intranet</td>
<td>Internet.</td>
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<tr>
<td>laptop computer</td>
<td>A flat-screen, battery-powered portable computer that you can rest on your lap.</td>
</tr>
<tr>
<td>local area network (LAN)</td>
<td>Multiple personal computers connected on a network.</td>
</tr>
<tr>
<td>mainframe computer</td>
<td>Expensive, room-size computer, used mostly for large computing jobs.</td>
</tr>
<tr>
<td>modem</td>
<td>Modulator/demodulator. A hardware device that connects a computer to a telephone line.</td>
</tr>
<tr>
<td>Moore's law</td>
<td>The prediction made in 1965 by Gordon Moore that the power of a silicon chip of the same price would double about every 18 months for at least two decades.</td>
</tr>
<tr>
<td>network</td>
<td>A computer system that links two or more computers.</td>
</tr>
<tr>
<td>network computer (NC)</td>
<td>A computer designed to function as part of a network rather than as a PC.</td>
</tr>
<tr>
<td>notebook computer</td>
<td>Another term for laptop computer.</td>
</tr>
<tr>
<td>output</td>
<td>Information given out by the computer.</td>
</tr>
<tr>
<td>paradigm shift</td>
<td>A change in thinking that results in a new way of seeing the world.</td>
</tr>
<tr>
<td>personal computer</td>
<td>A pocket-sized computer used to organize appointments, tasks, notes, contacts, and other personal information. Sometimes called handheld computer or palmtop computer. Many PDAs include additional software and hardware for wireless communication.</td>
</tr>
<tr>
<td>personal digital assistant (PDA)</td>
<td>Small, battery-powered computers such as laptops.</td>
</tr>
<tr>
<td>portable computers</td>
<td>A device that duplicates a laptop's ports, for ease of connection to monitors, printers, and other peripherals.</td>
</tr>
<tr>
<td>port replicator</td>
<td>Instructions that tell the hardware what to do to transform input into output.</td>
</tr>
<tr>
<td>program</td>
<td>A device that packs hundreds of transistors into a single integrated circuit on a tiny silicon chip.</td>
</tr>
<tr>
<td>network computer (NC)</td>
<td>A computer especially designed to provide software and other resources to other computers over a network.</td>
</tr>
<tr>
<td>server</td>
<td>A special-purpose computer designed to provide Internet access and other services using a standard television set and (usually) a cable TV connection.</td>
</tr>
<tr>
<td>set-top box</td>
<td>Hundreds of transistors packed into an integrated circuit on a piece of silicon.</td>
</tr>
<tr>
<td>Silicon Valley</td>
<td>The area around San Jose, California, that has become a hotbed of the computer industry since the 1970s, when dozens of microprocessor manufacturing companies sprouted and grew there.</td>
</tr>
<tr>
<td>software</td>
<td>Instructions that tell the hardware what to do to transform input into output.</td>
</tr>
<tr>
<td>subnotebooks</td>
<td>Portable computers, smaller than a notebook or laptop, about the size of a hardbound book.</td>
</tr>
<tr>
<td>supercomputer</td>
<td>A super-fast, super-powerful, and super-expensive computer used for applications that demand maximum power.</td>
</tr>
<tr>
<td>terminal</td>
<td>Combination keyboard and screen that transfers information to and from a mainframe computer.</td>
</tr>
<tr>
<td>timesharing</td>
<td>Technique by which mainframe computers communicate with several users simultaneously.</td>
</tr>
<tr>
<td>transistor</td>
<td>An electronic device that performs the same function as the vacuum tube by transferring electricity across a tiny resistor.</td>
</tr>
<tr>
<td>Web browsers</td>
<td>Application programs that enable you to explore the Web by clicking hyperlinks in Web pages stored on Web sites.</td>
</tr>
<tr>
<td>wide area network (WAN)</td>
<td>A network that extends over a long distance. Each network site is a node on the network.</td>
</tr>
<tr>
<td>workstation</td>
<td>A high-end desktop computer with massive computing power, though less expensive than a minicomputer. Workstations are the most powerful of the desktop computers. Part of the Internet, a collection of multimedia documents created by organizations and users worldwide. Documents are linked in a hypertext Web that allows users to explore them with simple</td>
</tr>
</tbody>
</table>
Chapter 2

HARDWARE BASICS: INSIDE THE BOX

Know it

Hard-Wired

- architecture
  Design that determines how individual components of the CPU are put together on the chip. More generally used to describe the way individual components are put together to create a complete computer system.

- ASCII
  American Standard Code for Information Interchange, a code that represents characters as 8-bit codes. Allows the binary computer to work with letters, digits, and special characters.

- backward compatible
  Able to run software written for older CPUs. Also, when referring to a software program, able to read and write files compatible with older versions of the program.

- bay
  An open area in the system box for disk drives and other peripheral devices.

- binary
  A choice of two values, such as yes and no or zero and one.

- bit
  Binary digit, the smallest unit of information. A bit can have two values: 0 or 1.

- bus
  Group of wires on a circuit board. Information travels between components through a bus.

- byte
  Grouping of 8 bits.

- central processing unit (CPU)
  Part of the computer that processes information, performs arithmetic calculations, and makes basic decisions based on information values.

- cluster
  A grouping of multiple processors or servers, for example, to improve graphic rendering speeds or increase reliability.

- compatible (compatibility)
  The ability of a software program to run on a specific computer system. Also, the ability of a hardware device to function with a particular type of computer.

- data
  Information in a form that can be read, used, and manipulated by a computer.

- digit
  A discrete, countable unit.

- digital
  Information made up of discrete units that can be counted.

- expansion slot
  An area inside the computer’s housing that holds special-purpose circuit boards.

- file
  An organized collection of related information stored in a computer-readable form.

- GB (gigabyte)
  Approximately 1000MB.

- information
  Anything that can be communicated.

- input device
  Device for accepting input, such as a keyboard.

- KB (kilobyte)
  About 1000 bytes of information.

- MB (megabyte)
  Approximately 1000K, or 1 million bytes.

- memory
  Stores programs and the data they need to be instantly accessible to the CPU.

- microprocessor
  Now known as a personal computer.

- motherboard
  The circuit board that contains a computer’s CPU. Also called a system board.

- multiprocessing
  Employing two or more microprocessors in a computer in order to improve overall performance. Also known as symmetric multiprocessing.

- nonvolatile memory
  Memory that is not lost when the computer is turned off. An example is the read-only memory that contains start-up instructions and other critical information.

- optical computer
  A potential future alternative to silicon-based computing, in which information is transmitted in light waves rather than in electrical pulses.

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### Chapter 3

**HARDWARE BASICS: PERIPHERALS**

- **output device**: Device for sending information from the computer, such as a monitor or printer.
- **parallel processing**: Using multiple processors to divide jobs into pieces and work simultaneously on the pieces.
- **PC card**: A credit-card-size card that can be inserted into a slot to expand memory or add a peripheral to a computer; commonly used in portable computers. Sometimes called by its original name, PCMCIA.
- **peripheral**: An external device, such as a keyboard or monitor, connected via cables to the system central processing unit.
- **PB (petabyte)**: The equivalent of 1024 terabytes, or 1 quadrillion bytes.
- **port**: Socket that allows information to pass in and out.
- **processor**: Part of the computer that processes information, performs arithmetic calculations, and makes basic decisions based on information values.
- **RAM (random access memory)**: Memory that stores program instructions and data temporarily.
- **ROM (read-only memory)**: Memory that includes permanent information only. The computer can only read information from it; it can never write any new information on it.
- **storage device**: Long-term repository for data. Disks and tape drives are examples.
- **symmetric multiprocessing**: See multiprocessing.
- **system bus**: A group of wires that transmits information between components on the motherboard.
- **TB (terabyte)**: Approximately 1 million megabytes.
- **Unicode**: A 65,000-character set for making letters, digits, and special characters fit into the computer's binary circuitry.
- **bar code reader**: A reading tool that uses light to read universal product codes, inventory codes, and other codes created out of patterns of variable-width bars.
- **CRT (cathode-ray tube) monitors**: Television-style monitors used as the output device for many desktop computers.
- **CD-R**: Compact disk-recordable, an optical disk you can write information on, but you cannot remove the information.
- **CD-ROM**: Compact disc-read-only memory, a type of optical disk that contains data that cannot be changed; CD-ROMs are commonly used to distribute commercial software programs.
- **CD-ROM drive**: A common optical drive in computers that can read data from CD-ROM disks.
- **CD-RW**: Compact disk-rewritable, an optical disk that allows writing, erasing, and rewriting.
- **CD-RW drive**: A disk drive that can read and write on rewritable optical disks.
- **digital camera**: A camera that captures images and stores them as bit patterns on disks or other digital storage media instead of using film.
- **digitize**: Converting information into a digital form that can be stored in the computer's memory.
- **diskettes (disks)**: Small, magnetically sensitive, flexible plastic wafers housed in a plastic case, used as a storage device.
- **disk drive**: See diskette drive.
- **display**: A type of impact printer, which forms images by physically striking paper, ribbon, and print hammer
A type of optical disk with multigigabyte capacity that can be read, written, and erased.

An optical disk drive that can read high-capacity DVD disks.

A keyboard that places the keys at angles that allow your wrists to assume a more natural position while you type, potentially reducing the risk of repetitive-stress injuries.

The science of designing work environments that enable people and things to interact efficiently and safely.

An output device capable of sending, in effect, a photocopy through a telephone line, allowing for fast and convenient transmission of information stored on paper.

Hardware peripheral that enables a computer to send onscreen documents to a receiving fax machine by translating the document into signals that can be sent over phone wires and decoded by the receiving fax machine.

See IEEE 1394.

A type of erasable memory chip used in cell phones, pagers, portable computers, and handheld computers, among other things.

A pressure-sensitive touch tablet used as a pointing device. The user presses on the tablet with a stylus.

Software that translates the user's handwritten forms into ASCII characters.

A rigid, magnetically sensitive disk that spins rapidly and continuously inside the computer chassis or in a separate box attached to the computer housing. Used as a storage device.

To remove and replace peripheral devices without powering down the computer and peripherals. Some modern interface standards such as USB and FireWire allow hot-swapping.

Printer that forms images by physically striking paper, ribbon, and print hammer together.

A nonimpact printer that sprays ink directly onto paper to produce printed text and graphic images.

Standards for ports and other connective technology agreed upon by the hardware industry so that devices made by one manufacturer can be attached to systems made by other companies.

A gearshift-like device used as a controller for arcade-style computer games.

Input device, similar to a typewriter keyboard, for entering data and commands into the computer.

A nonimpact printer that uses a laser beam to create patterns of electrical charges on a rotating drum. The charged patterns attract black toner and transfer it to paper as the drum rotates.

An impact printer used by mainframes to produce massive printouts. They print characters only, not graphics.

Flat-panels displays, once primarily used for portable computers but now replacing bulkier CRT monitors for desktops.

Storage medium with random-access capability, accessed by the computer's disk drive.

A device that reads numbers printed with magnetic ink on checks.

A storage medium used with a tape drive to store large amounts of information in a small space at relatively low cost.

An output device that displays text and graphics onscreen.

A handheld input device that, when moved around on a desktop or table, moves a pointer around the computer screen.

An all-in-one output device that usually combines a scanner, a laser or inkjet printer, and a fax modem.

A printer that produces characters without physically striking the page.
USB (universal serial bus) is a data path standard that theoretically allows up to 126 devices, such as keyboards, digital cameras, and scanners, to be chained together from a single port, allowing for data transmission that is much faster and more flexible than through traditional serial and parallel ports.

Touchpad (trackpad) is a small flat-panel pointing device that is sensitive to light pressure. The user moves the pointer by dragging a finger across the pad.

Trackball is a pointing device that remains stationary while the user moves a protruding ball to control the pointer on the screen.

Touch screen is a pointing device that responds when the user points to or touches different screen regions.

Point-of-sale (POS) terminal is a terminal with a wand reader, barcode scanner, or other device that captures information at the check-out counter of a store.

Printer is an output device that produces a paper copy of any information that can be displayed on the screen.

Radio frequency identification (RFID) reader is a reading tool that uses radio waves to communicate with RFID tags.

Sequential access is a storage method that requires the user to retrieve information by zipping through it in the order in which it was recorded.

Solid-state storage is storage, such as flash memory, with no moving parts. Solid-state storage is likely to replace disk storage in the future.

Sound card is a circuit board that allows the PC to accept microphone input, play music and other sound through speakers or headphones, and process sound in a variety of ways.

Storage device is long-term repository for data. Disks and tape drives are examples.

Tape drive is a storage device that uses magnetic tape to store information.

Optical character recognition (OCR) is locating and identifying printed characters embedded in an image, allowing the text to be stored as an editable document. OCR can be performed by wand readers, pen scanners, and OCR software.

Optical disk drive is a disk drive that uses laser beams to read and write bits of information on the surface of an optical disk.

Optical mark reader is a reading device that uses reflected light to determine the location of pencil marks on standardized test answer sheets and similar forms.

Pen-based computer is a keyboardless machine that accepts input from a stylus applied directly to a flat-panel screen.

Photo printer is a type of newer inkjet printer specially optimized to print high-quality photos captured with digital cameras and scanners.

Plotter is an automated drawing tool that produces finely scaled drawings by moving pen and/or paper in response to computer commands.

Pointing stick (TrackPoint) is a tiny joystick-like device embedded in the keyboard of a laptop computer.

Pointing device is a device that responds when the user points to or touches different screen regions.

Queue is a collection of records or tasks waiting to be processed.

Random access is a storage method that allows information retrieval without regard to the order in which it was recorded.

Removable cartridge media is a type of portable storage media that can be easily replaced.

Repetitive-stress injuries are conditions that result from repeating the same movements over long periods, such as keyboarding-induced carpal tunnel syndrome, a painful affliction of the wrist and hand.

Resolution is density of pixels, measured by the number of dots per inch.

Scanner is an input device that makes a digital representation of any printed image. See flatbed scanners, slide scanners, drum scanners, and sheetfed scanners.

Sensor is a device that enables digital machines to monitor a physical quantity of the analog world, such as temperature, humidity, or pressure, to provide data used in robotics, environmental climate control, and other applications.

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Chapter 4

SOFTWARE BASICS: The Ghost in the Machine

An operating system platform from Microsoft that blurs the line between the Web and Microsoft’s operating systems and applications.

Software programs that can ask questions, respond to commands, pay attention to users’ work patterns, serve as a guide and a coach, take on owners' goals, and use reasoning to fabricate their own goals.

A set of step-by-step instructions that, when completed, solves a problem.

A collection of several related application programs that are also sold as separate programs.

Loading the non-ROM part of the operating system into memory.

An error in programming.

A user interface based on text characters rather than graphics.

User interface that requires the user to type text commands on a command-line to communicate with the operating system.

The ability of a software program to run on a specific computer system. Also, the ability of a hardware device to function with a particular type of computer.

A translator program that translates an entire program from a high-level computer language before the program is run for the first time.

A large computer working on several jobs at the same time. The computer uses multiple CPUs to process jobs simultaneously.

Menus offering choices that depend on the context.

A type of law that covers trade secrets.

A type of law that traditionally protects forms of literary expression.

Software that prevents a disk from being copied.

An application programmed for a specific purpose, typically for a specific client.

Finding and correcting errors-bugs-in computer software.

A program that eliminates fragmented files by changing the assignment of clusters to files.

The virtual workspace on a graphical user interface that resembles the physical desktops found in brick-and-mortar offices.

Small programs that allow input/output devices to communicate with the computer.

In a graphical user interface, a box that enables the user to communicate with the computer.

A file, such as a term paper or chart created with applications.

Instructions for installing the software on a computer’s hard disk.

An agreement typically including specifications for how a program may be used, warranty disclaimers, and rules concerning the copying of the software.

A program that allows you to view, rename, copy, move, and delete files and folders.

A container for files and other folders. Also called a directory.
<table>
<thead>
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<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>formatting</td>
<td>The function of software, such as word processing software, that enables users to change the appearance of a document by specifying the font, point size, and style of any character in the document, as well as the overall layout of text and graphical elements in the document.</td>
</tr>
<tr>
<td>fragmented file</td>
<td>A file allocated to noncontiguous clusters on a disk, thus degrading the disk's performance.</td>
</tr>
<tr>
<td>graphical user interface (GUI)</td>
<td>A user interface based on graphical displays. With a mouse, the user points to icons that represent files, folders, and disks. Documents are displayed in windows. The user selects commands from menus.</td>
</tr>
<tr>
<td>hierarchical menus</td>
<td>Menus that organize commands into compact, efficient submenus.</td>
</tr>
<tr>
<td>high-level language</td>
<td>A programming language that falls somewhere between natural human languages and precise machine languages, developed to streamline and simplify the programming process.</td>
</tr>
<tr>
<td>icon</td>
<td>In a graphical user interface, a picture that represents a file, folder, or disk.</td>
</tr>
<tr>
<td>integrated software</td>
<td>Software packages that include several applications designed to work well together.</td>
</tr>
<tr>
<td>intellectual property</td>
<td>The results of intellectual activities in the arts, science, and industry.</td>
</tr>
<tr>
<td>Java</td>
<td>A platform-neutral, object-oriented programming language developed by Sun Microsystems for use on multiplatform networks.</td>
</tr>
<tr>
<td>Linux</td>
<td>An operating system based on UNIX, maintained by volunteers, and distributed for free. Linux is used mostly in servers and embedded computers, but is growing in popularity as a PC operating system.</td>
</tr>
<tr>
<td>machine language</td>
<td>The language that computers use to process instructions. Machine language uses numeric codes to represent basic computer operations.</td>
</tr>
<tr>
<td>Mac OS</td>
<td>The operating system for the Apple Macintosh computer.</td>
</tr>
<tr>
<td>menu</td>
<td>An onscreen list of command choices.</td>
</tr>
<tr>
<td>menu-driven interface</td>
<td>User interface that enables users to choose commands from onscreen lists called menus.</td>
</tr>
<tr>
<td>Microsoft Windows</td>
<td>The most popular and powerful PC operating system; uses a graphical user interface.</td>
</tr>
<tr>
<td>MS-DOS</td>
<td>Microsoft Disk Operating System, an operating system with character-based user interface; it was widely used in the 1980s and early 1990s but has been superceded by Windows.</td>
</tr>
<tr>
<td>multitasking</td>
<td>Concurrent processing for personal computers. The user can issue a command that initiates a process and continue working with other applications while the computer follows through on the command.</td>
</tr>
<tr>
<td>natural language</td>
<td>Language that people speak and write every day.</td>
</tr>
<tr>
<td>open source software</td>
<td>Software that can be distributed and modified freely by users; Linux is the best-known example.</td>
</tr>
<tr>
<td>operating system (OS)</td>
<td>A system of programs that performs a variety of technical operations, providing an additional layer of insulation between the user and the bits-and-bytes world of computer hardware.</td>
</tr>
<tr>
<td>patent</td>
<td>A type of law that protects mechanical inventions.</td>
</tr>
<tr>
<td>pathname</td>
<td>The unique location specification for every computer file and folder, describing the nesting of folders containing it.</td>
</tr>
<tr>
<td>platform</td>
<td>The combination of hardware and operating system software upon which application software is built.</td>
</tr>
<tr>
<td>pop-up menus</td>
<td>Menus that can appear anywhere on the screen.</td>
</tr>
<tr>
<td>public domain software</td>
<td>Free software that is not copyrighted, offered through World Wide Web sites, electronic bulletin boards, user groups, and other sources.</td>
</tr>
<tr>
<td>pull-down menus</td>
<td>In a graphical user interface, menus located at the top of the screen or window and accessed with a mouse or with keyboard shortcuts. Also called drop-down menus.</td>
</tr>
<tr>
<td>root directory</td>
<td>The main folder on a computer's primary hard disk, containing all the other files and folders kept on the disk.</td>
</tr>
<tr>
<td>shareware</td>
<td>Software that is free for the trying, with a send-payment-if-you-keep-it honor system.</td>
</tr>
</tbody>
</table>
**Chapter 5  BASIC PRODUCTIVITY APPLICATIONS**

**Know it**

- **shell** A program layer that stands between the user and the operating system.
- **software license** An agreement allowing the use of a software program on a single machine.
- **software piracy** The illegal duplication of copyrighted software.
- **system software** Software that handles the details of computing. Includes the operating system and utility programs.
- **trademark** Legal ownership protection for symbols, pictures, sounds, colors, and smells used by a business to identify goods.
- **UNIX** An operating system that allows a timesharing computer to communicate with several other computers or terminals at once. UNIX is the most widely available multi-user operating system in use. It is also widely used on Internet hosts.
- **upgrade** A new and improved version of a software program.
- **user interface** The look and feel of the computing experience from a human point of view.
- **utility programs** Software that serves as tools for doing system maintenance and some repairs that are not automatically handled by the operating system.
- **vertical-market application** A computer application designed specifically for a particular business or industry.
- **virtual memory** Use of part of a computer hard disk as a substitute for RAM.
- **virtual reality** Technology that creates the illusion that the user is immersed in a world that exists only inside the computer, an environment that contains both scenes and the controls to change those scenes.
- **window** In a graphical user interface, a framed area that can be opened, closed, and rearranged with the mouse. Documents are displayed in windows.

- **accounting and financial management software** Software especially designed to set up accounts, keep track of money flow between accounts, record transactions, adjust balances in accounts, provide an audit trail, automate routine tasks such as check writing, and produce reports.
- **address** In a spreadsheet, the location of a cell, determined by row number and column number.
- **agents** Software programs that can ask questions, respond to commands, pay attention to users' work patterns, serve as a guide and a coach, take on owners' goals, and use reasoning to fabricate their own goals.
- **automatic correction (autocorrect)** A word processing feature that catches and corrects common typing errors.
- **automatic footnoting** A word processing feature that places footnotes where they belong on the page.
- **automatic formatting** A word processing feature that applies formatting to the text.
- **automatic hyphenation** A word processing feature that divides long words that fall at the ends of lines.
- **automatic link** A link between worksheets in a spreadsheet that ensures that a change in one worksheet is reflected in the other.
- **automatic recalculation** A spreadsheet capability that allows for easy correction of errors and makes it easy to try out different values while searching for solutions.
- **bar chart** A chart that shows relative values with bars, appropriate when data fall into a few categories.
- **bot** Software robots that crawl around the Web collecting information, helping consumers make decisions, answering email, and even playing games.
- **camera-ready** Typeset-quality pages, ready to be photographed and printed.
cell
The intersection of a row and a column on the grid of a spreadsheet.

columns
Along with rows, comprise the grid of a spreadsheet.

desktop publishing (DTP)
Software used mainly to produce print publications. Also, the process of using desktop publishing software to produce publications.

electronic book (ebook)
A handheld device that displays digital representations of the contents of books.

Electronic paper (epaper)
A flexible, portable, paperlike material that can dynamically display black-and-white text and images on its surface, as well as erase itself and display new text and images as the reader "turns" the page.

equation solver
A feature of some spreadsheet programs that determines data values.

feedback loop
In a computer simulation, the user and the computer responding to data from each other.

footer
Block of information that appears at the bottom of every page in a document, displaying repetitive information such as an automatically calculated page number.

formula
Step-by-step procedure for calculating a number on a spreadsheet.

function
A predefined set of calculations, such as SUM and AVERAGE, in spreadsheet software.

GIGO (garbage in, garbage out)
Valid output requires valid input.

grammar and style checker
Component of word processing software that analyzes each word in context, checking for content errors, common grammatical errors, and stylistic problems.

groupware
Software designed to be used by work groups rather than individuals.

header
Block that appears at the top of every page in a document, displaying repetitive information such as a chapter title.

HTML (hypertext markup language)
An HTML document is a text file that includes codes that describe the format, layout, and logical structure of a hypermedia document. Most Web pages are created with HTML.

justification
The alignment of text on a line: left justification (smooth left margin and ragged right margin), right justification, (smooth right margin and ragged left margin).

label
In a spreadsheet, a text entry that provides information on what a column or row represents.

line chart
A chart that shows trends or relationships over time, or a relative distribution of one variable through another.

macro
Custom-designed embedded procedure program that automates tasks in application programs.

mail merge
A feature of a word processor or other program that enables it to merge names and addresses from a database mailing list into personalized form letters and mailings.

mathematics processing software
Software designed to deal with complex equations and calculations. A mathematics processor enables the user to create, manipulate, and solve equations easily.

modeling
The use of computers to create abstract models of objects, organisms, organizations, and processes.

online banking
Use of the Internet to conduct basic banking transactions.

outliner
Software that facilitates the arrangement of information into hierarchies or levels of ideas. Some word processors include outline views that serve the same function as separate outliners.

page-layout software
In desktop publishing, software used to combine various source documents into a coherent, visually appealing publication.

pie chart
A round pie-shaped chart with slices that show the relative proportions of the parts to a whole.

replication
Automatic replication of values, labels, and formulas, a feature of spreadsheet software.

scatter chart
Discovers a relationship between two variables.

scientific visualization software
Uses shape, location in space, color, brightness, and motion to help you understand invisible relationships, providing graphical representation of numerical data.
source document

speech-recognition software

spelling checker (batch or interactive)

spreadsheet software

stack chart

statistical analysis software

statistics

stylesheet

tax preparation software

templates

thesaurus

value

what if? Questions

wizard

worksheet

WYSIWYG

Chapter 6

GRAPHICS, DIGITAL MEDIA, & MULTIMEDIA

3-D modeling software

animation

audio digitizers

augmented reality (AR)

bit depth

bitmapped graphics

bullet charts

In desktop publishing, the articles, chapters, drawings, maps, charts, and photographs that are to appear in the publication. Usually produced with standard word processors and graphics programs.

See speech recognition.

A built-in component of a word processor or a separate program that compares words in a document with words in a disk-based dictionary and flags words not found in the dictionary. May operate in batch mode, checking all the words at once, or interactive mode, checking one word at a time.

Enables the user to control numbers, manipulating them in various ways. The software can manage budgeting, investment management, business projections, grade books, scientific simulations, checkbooks, financial planning and speculation, and other tasks involving numbers.

Stacked bars to show how proportions of a whole change over time.

Specialized software that tests the strength of data relationships, produces graphs showing how two or more variables relate to each other, uncovers trends, and performs other statistical analyses.

The science of analyzing and collecting data.

Custom styles for each of the common elements in a document.

Provides a prefabricated worksheet where the user enters numbers into tax forms. Calculations are performed automatically, and the completed forms can be sent electronically to the IRS.

In desktop publishing, professionally designed empty documents that can be adapted to specific user needs. In spreadsheet software, worksheets that contain labels and formulas but no data values. The template produces instant answers when you fill in the blanks.

A synonym finder; often included with a word processor.

The numbers that are the raw material used by spreadsheet software to perform calculations.

A feature of spreadsheet software that allows speculation by providing instant answers to hypothetical questions.

A software help agent that walks the user through a complex process.

A spreadsheet document that appears on the screen as a grid of numbered rows and columns. Short for “what you see is what you get,” pronounced “wizzy-wig.” With a word processor, the arrangement of the words on the screen represents a close approximation to the arrangement of words on the printed page.

Software that enables the user to create 3-D objects. The objects can be rotated, stretched, and combined with other model objects to create complex 3-D scenes.

The process of simulating motion with a series of still pictures.

Hardware devices or software programs that capture a sound and store it as a data file on a disk.

The use of computer displays that add virtual information to a person’s sensory perceptions, supplementing rather than replacing (as in virtual reality) the world the user sees.

Color depth, the number of bits devoted to each pixel in a color display.

Graphics in which images are stored and manipulated as organized collections of pixels rather than as shapes and lines. Contrast with object-oriented graphics.

Graphical elements, such as drawings and tables, integrated into a series of charts that list the main points of a presentation.
public domain
Creative work or intellectual property that is freely usable by anyone, either because the copyright
has expired or because the creator obtained a Creative Commons license for the work.

PostScript
A standard page-description language.

presentation graphics
software
Creative work or intellectual property that is freely usable by anyone, either because the copyright
has expired or because the creator obtained a Creative Commons license for the work.

pixel
A picture element (dot) on a computer screen or printout. Groups of pixels compose the images on
the monitor and the output of a printout.

color depth
Bit depth, the number of bits devoted to each pixel.

PostScript
A standard page-description language.

MIDI
Musical Instrument Digital Interface, a standard interface that allows electronic instruments and
computers to communicate with each other and work together.

MM3
A method of compression that can squeeze a music file to a fraction of its original CD file size with
only slight loss of quality.

Multimedia
Using some combination of text, graphics, animation, video, music, voice, and sound effects to
communicate.

drawing software
Stores a picture as a collection of lines and shapes. Also stores shapes as shape formulas and text
as text.

frame
In animation, one still picture in a video or animated sequence.

gray-scale graphics
Computerized imaging that allows each pixel to appear as black, white, or one of several shades of
gray.

digital video
Video reduced to a series of numbers, which can be edited, stored, and played back without loss of
quality.

image processing
Software that enables the user to manipulate photographs and other high-resolution images.

multimedia
Multimedia that enables the user to take an active part in the experience.

Object-oriented graphics
The storage of pictures as collections of lines, shapes, and other objects.

painting software
Enables you to paint pixels on the screen with a pointing device.

hypertext
The combination of text, numbers, graphics, animation, sound effects, music, and other media in
hyperlinked documents.

hypermedia
An interactive cross-referenced system that allows textual information to be linked in nonsequential
ways. A hypertext document contains links that lead quickly to other parts of the document or to
related documents.

multimedia-authoring
software
Enables the creation and editing of multimedia documents.

frame
In animation, one still picture in a video or animated sequence.

button
A hot spot on a screen that responds to mouse clicks. A button can be programmed to perform one
of many tasks, such as opening a dialog box or launching an application.

compression
Making files smaller using special encoding schemes. File compression saves storage space on disks
and saves transmission time when files are transferred through networks.

computer-aided design
(CAD)
The use of computers to draw products or process designs on the screen.

computer-aided
manufacturing (CAM)
When the design of a product is completed, the numbers are fed to a program that controls the
manufacturing of parts. For electronic parts the design translates directly into a template for
etching circuits onto chips. Also called computer integrated manufacturing (CIM).

computer-integrated
manufacturing (CIM)
The combination of CAD and CAM.

digital video
Video reduced to a series of numbers, which can be edited, stored, and played back without loss of
quality.

drawing software
Stores a picture as a collection of lines and shapes. Also stores shapes as shape formulas and text
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multimedia
Multimedia that enables the user to take an active part in the experience.

MIDI
Musical Instrument Digital Interface, a standard interface that allows electronic instruments and
computers to communicate with each other and work together.

morph
Video clip in which one image metamorphoses into another.

MP3
A method of compression that can squeeze a music file to a fraction of its original CD file size with
only slight loss of quality.

multimedia
Using some combination of text, graphics, animation, video, music, voice, and sound effects to
communicate.

multimedia-authoring
software
Enables the creation and editing of multimedia documents.

object-oriented graphics
The storage of pictures as collections of lines, shapes, and other objects.

page-description language
A language used by many drawing programs that describes text fonts, illustrations, and other
elements of the printed page.

painting software
Enables you to paint pixels on the screen with a pointing device.

pixel
A picture element (dot) on a computer screen or printout. Groups of pixels compose the images on
the monitor and the output of a printout.

PostScript
A standard page-description language.

presentation graphics
software
Creative work or intellectual property that is freely usable by anyone, either because the copyright
has expired or because the creator obtained a Creative Commons license for the work.
Chapter 7
DATABASE APPLICATIONS & IMPLICATIONS

batch processing
Accumulating transactions and feeding them into a computer in large batches.

browse
The process of finding information in a database or other data source, such as the World Wide Web.

centralized database
A database housed in a mainframe computer, accessible only to information-processing personnel. Client programs in desktop computers send information requests through a network to server databases on mainframes, minicomputers, or desktop computers; the servers process queries and send the requested data back to the client.

computed field
In a database, a field containing formulas similar to spreadsheet formulas; they display values calculated from values in other numeric fields.

data mining
The discovery and extraction of hidden predictive information from large databases.

data scrubbing (data cleansing)
The process of going through a database and eliminating records that contain errors.

data warehouse
An integrated collection of corporate data stored in one location.

database
A collection of information stored in an organized form in a computer.
database management system (DBMS)
A program or system of programs that can manipulate data in a large collection of files (the database), cross-referencing between files as needed.
database program
A software tool for organizing the storage and retrieval of the information in a database.
dirty data
Data records with spelling mistakes, incorrect or obsolete values, or other errors.
distributed database
Data strewn out across networks on several different computers.
export data
Transmitting records and fields from a database program to another program.
field
Each discrete chunk of information in a database record.
file manager
A program that enables users to manipulate files on their computers.
geographical information system (GIS)
A specialized database that combines tables of data with demographic information and displays geographic and demographic data on maps.

identity (ID) theft
The crime, committed by hackers or other unscrupulous individuals, of obtaining enough information about a person to assume his or her identity, often as a prelude to illegally using the victim’s credit cards.

import data
To move data into a program from another program or source.

interactive processing
Interacting with data through terminals, viewing and changing values online in real time.

object-oriented database
Instead of storing records in tables and hierarchies, stores software objects that contain procedures (or instructions) with data.

personal information manager (PIM)
A specialized database program that automates an address/phone book, an appointment calendar, a to-do list, and miscellaneous notes. Also called an electronic organizer.

privacy
Freedom from unauthorized access to one's person, or to knowledge about one's person.

query
An information request.

query language
A special language for performing queries, more precise than the English language.

real time
When a computer performs tasks immediately.

record
In a database, the information relating to one person, product, or event.

record matching
Compiling profiles by combining information from different database files by looking for a shared unique field.

relational database
A program that allows files to be related to each other so that changes in one file are reflected in other files automatically.

report
A database printout that is an ordered list of selected records and fields in an easy-to-read form.

right to privacy
Freedom from interference into the private sphere of a person’s affairs.

search
Looking for a specific record.

select (records)
Looking for all records that match a set of criteria.

sort
Arrange records in alphabetic or numeric order based on values in one or more fields.

Structured Query Language (SQL)
A query language available for many different database management systems. More than a query language, SQL also accesses databases from a wide variety of vendors.

table
A grid of rows and columns; on many Web pages tables with hidden grids are used to align graphical images.

XML
Extensible Markup language, a language that enables Web developers to control and display data the way they control text and graphics. Forms, database queries, and other data-intensive operations that can't be completely constructed with standard HTML are much easier with XML.

Chapter 8
NETWORKING & TELECOMMUNICATIONS

asynchronous communication
Delayed communication, such as that used for newsgroups and mailing lists, where the sender and the recipients don't have to be logged in at the same time.

attachments
A way to send formatted word processor documents, pictures, and other multimedia files via email. The quantity of information that can be transmitted through a communication medium in a given amount of time.

bits per second (bps)
The standard unit of measure for modem speed.

Bluetooth
A type of wireless technology that enables mobile phones, handheld computers, and PCs to communicate with each other regardless of operating system.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>bounce</td>
<td>The automatic return of an undeliverable email message to its sender.</td>
</tr>
<tr>
<td>bridges</td>
<td>Hardware devices that can pass messages between networks.</td>
</tr>
<tr>
<td>chat room</td>
<td>Public real-time teleconference.</td>
</tr>
<tr>
<td>client/server model</td>
<td>For a local-area network, a hierarchical model in which one or more computers act as dedicated servers and all the remaining computers act as clients. The server fills requests from clients for data and other resources.</td>
</tr>
<tr>
<td>communication software</td>
<td>Software that enables computers to interact with each other over a phone line or other network.</td>
</tr>
<tr>
<td>digital signal</td>
<td>A stream of bits.</td>
</tr>
<tr>
<td>direct connection</td>
<td>A dedicated, direct connection to the Internet through a LAN, with the computer having its own IP address.</td>
</tr>
<tr>
<td>download</td>
<td>To copy software from an online source to a local computer.</td>
</tr>
<tr>
<td>electronic mail (email)</td>
<td>Allows Internet users to send mail messages, data files, and software programs to other Internet users and to users of most commercial networks and online services.</td>
</tr>
<tr>
<td>Ethernet</td>
<td>A popular networking architecture developed in 1976 at Xerox.</td>
</tr>
<tr>
<td>FAQs (frequently asked questions)</td>
<td>Posted lists of common queries and their answers.</td>
</tr>
<tr>
<td>fiber-optic cable</td>
<td>High-capacity cable that uses light waves to carry information at blinding speeds.</td>
</tr>
<tr>
<td>file server</td>
<td>In a LAN, a computer used as a storehouse for software and data that are shared by several users. Computers connected to two networks that translate communication protocols and transfer information between the two.</td>
</tr>
<tr>
<td>gateways</td>
<td>A Defense Department system with 24 satellites that can pinpoint any location on the Earth.</td>
</tr>
<tr>
<td>host system</td>
<td>A computer that provides services to multiple users.</td>
</tr>
<tr>
<td>instant messaging</td>
<td>A technology that enables users to create buddy lists, check for buddies who are logged in, and exchange typed messages and files with those who are.</td>
</tr>
<tr>
<td>Internet telephony (IP telephony)</td>
<td>A combination of software and hardware technology that enables the Internet to, in effect, serve as a telephone network. Internet telephony systems can use standard telephones, computers, or both to send and receive voice messages.</td>
</tr>
<tr>
<td>local area network (LAN)</td>
<td>Multiple personal computers connected on a network.</td>
</tr>
<tr>
<td>mailing lists</td>
<td>Email discussion groups on special-interest topics. All subscribers receive messages sent to the group’s mailing address.</td>
</tr>
<tr>
<td>modem</td>
<td>Modulator/demodulator. A hardware device that connects a computer to a telephone line.</td>
</tr>
<tr>
<td>netiquette</td>
<td>Rules of etiquette that apply to Internet communication.</td>
</tr>
<tr>
<td>network interface card (NIC)</td>
<td>Card that adds an additional serial port to a computer. The port is especially designed for a direct network connection.</td>
</tr>
<tr>
<td>network license</td>
<td>License for multiple copies or removing restrictions on software copying and use at a network site.</td>
</tr>
<tr>
<td>network operating system (NOS)</td>
<td>Server operating system software for a local-area network.</td>
</tr>
<tr>
<td>newsgroups</td>
<td>Originally public discussions on a particular subject, community of rules written to a central Internet site and redistributed through a worldwide newsgroup network called Usenet. You can check into and out of them whenever you want; all messages are posted on virtual bulletin boards for anyone to read anytime.</td>
</tr>
<tr>
<td>peer-to-peer model</td>
<td>A LAN model that allows every computer on the network to be both client and server.</td>
</tr>
<tr>
<td>port</td>
<td>Socket that allows information to pass in and out.</td>
</tr>
<tr>
<td>protocol</td>
<td>A set of rules for the exchange of data between a terminal and a computer or between two computers.</td>
</tr>
<tr>
<td>real-time communication</td>
<td>Internet communication that enables you to communicate with other users who are logged on at the same time.</td>
</tr>
</tbody>
</table>
Chapter 9

Inside the Internet and the WWW

A common type of Internet server that stores PC office applications, databases, or other applications and makes them available to client programs that request them.

A company that manages and delivers application services on a contract basis.

Short for Web log, a personal Web page that often carries diary-like entries or political commentaries. Blogs are fast proliferating as new software allows users to create Web pages without having to learn the technical details of HTML and Web authoring.

An Internet connection such as DSL or cable modem that offers higher bandwidth, and therefore faster transmission speed, than standard modem connections.

E-commerce transactions that involve businesses providing goods or services to other businesses.

E-commerce transactions that involve businesses providing goods or services to consumers.

Small files deposited on a user’s hard disk by Web sites, enabling sites to remember what they know about their visitors between sessions.

A term used to describe the Internet and other online networks, especially the artificial realities and virtual communities that form on them. First coined by William Gibson in his novel, Neuromancer.

A Web site that can display dynamic, changeable content without having constantly redesigned pages, due to an evolving database that separates the site’s content from its design.

A system for purchasing goods and services on the Internet without using credit cards.

Network access via phone line, TV cable system, or wireless link.

Protocols developed as an experiment in internetworking, now the language of the Internet, allowing cross-network communication for almost every type of computer and network.

Long-distance electronic communication in a variety of forms.

Technology that enables computers to serve as speakerphones, answering machines, and complete voice mail systems.

Software that allows a PC to act as a dumb terminal—an input/output device that enables the user to send commands to and view information on the host computer.

To post software or documents to an online source so they’re available for others.

Face-to-face communication over long distances using video and computer technology.

A telephone-based messaging system with many of the features of an email system.

A network that extends over a long distance. Each network site is a node on the network.

A popular wireless LAN technology that allows multiple computers to connect to a LAN through a base station up to 150 feet away. Often referred to as 802.11b.

A network in which a node has a tiny radio or infrared transmitter connected to its network port so it can send and receive data through the air rather than through cables.
digital divide
A term that describes the divide between the people who do and do not have access to the Internet.

DSL (digital subscriber line)
A type of broadband connection to the Internet offered by phone companies.

direct connection
A dedicated, direct connection to the Internet through a LAN, with the computer having its own IP address.

electronic commerce (e-commerce)
Business transactions through electronic networks.

email server
A specialized server that acts like a local post office for a particular Internet host.

XML
Extensible Markup language, a language that enables Web developers to control and display data the way they control text and graphics. Forms, database queries, and other data-intensive operations that can’t be completely constructed with standard HTML are much easier with XML.

extranets
Private TCP/IP networks designed for outside use by customers, clients, and business partners of an organization. These networks are typically for electronic commerce.

file transfer protocol (FTP)
A communications protocol that enables users to download files from remote servers to their computers and to upload files they want to share from their computers to these archives.

filtering software
Software that, for the most part, keeps offensive and otherwise inappropriate Web content from being viewed by children, on-duty workers, and others.

grid computing
A form of distributed computing in which not files but processing power is shared between networked computers.

HTML (hypertext markup language)
An HTML document is a text file that includes codes that describe the format, layout, and logical structure of a hypermedia document. Most Web pages are created with HTML.

Internet2
An alternative Internet-style network that provides faster network communications for universities and research institutions.

Internet service provider (ISP)
A business that provides its customers with connections to the Internet along with other services.

internetworking
Connecting different types of networks and computer systems.

intranet
A self-contained intraorganizational network that is designed using the same technology as the Internet.

Java
A platform-neutral, object-oriented programming language developed by Sun Microsystems for use on multiplatform networks.

JavaScript
A Web scripting language similar to, but otherwise unrelated to, Java.

narrowband connections
Dial-up Internet connections; named because they don’t offer much bandwidth when compared to other types of connections.

open standards
Standards not owned by any company.

packet-switching
The standard technique used to send information over the Internet. A message is broken into packets that travel independently from network to network toward their common destination, where they are reunited.

peer-to-peer (P2P)
computing
See peer-to-peer model.

plug-in
A software extension that adds new features.

portal
A Web site designed as a Web entry station, offering quick and easy access to a variety of services.

pull technology
Technology in which browsers on client computers pull information from server machines. The browser needs to initiate a request before any information is delivered.

push technology
Technology in which information is delivered automatically to a client computer. The user subscribes to a service and the server delivers that information periodically and unobtrusively. Contrast with pull technology.

satellite Internet connections
A broadband technology available through many of the same satellite dishes that provide television channels to viewers. For many rural homes and businesses, satellite Internet connections provide the only high-speed Internet access options available.
computer security
Protecting computer systems and the information they contain against unwanted access, damage, modification, or destruction.

denial of service (DoS) attack
A type of computer vandalism that bombards servers and Web sites with so much bogus traffic that they’re effectively shut down, denying service to legitimate customers and clients.

Know it

Hard-Wired

access-control software
A microprocessor-controlled ID badge that broadcasts infrared identification codes to a network receiver that updates a badge-location database.

active badge
A program designed to search for viruses, notify users when they’re found, and remove them from infected files.

antivirus authentication mechanisms
Computer network security measures that ensure that only legitimate users have access to the system by asking potential users to identify themselves.

authorization mechanisms
Complex systems that can assume almost complete responsibility for a task without human input, verification, or decision making.

autonomous systems
The process of saving data—especially for data recovery. Many systems automatically back up data and software onto disks or tapes.

backup
Measurements of individual body characteristics, such as a voice print or fingerprint; sometimes used in computer security.

biometrics
Policies and procedures, such as those developed by companies and by organizations such as the ACM (Association for Computing Machinery), to guide the behavior of information workers.

Code of Ethics
Any crime accomplished through knowledge or use of computer technology.

computer crime
Protecting computer systems and the information they contain against unwanted access, damage, modification, or destruction.

computer security
deny the address of a Web site.

virtual private networks
Networks that use encryption software to create secure "tunnels" through the public Internet.

World Wide Web (WWW)
Part of the Internet, a collection of multimedia documents created by organizations and users worldwide. Documents are linked in a hypertext Web that allows users to explore them with simple mouse clicks.

XHTML
Markup language that combines features of HTML and XML; its advantage is its backward compatibility with HTML.

Chapter 10

COMPUTER SECURITY AND RISKS

Software that only allows user access according to the user’s needs. Some users can open only files that are related to their work. Some users are allowed read-only access to files they can see but not change.

streaming audio
Sound files that play without being completely downloaded to the local hard disk.

streaming video
Video clip files that play while being downloaded.

SMIL (synchronized multimedia integration language)
An HTML-like language designed to make it possible to link time-based streaming media so that, for example, sounds, video, and animation can be tightly integrated with each other.

URL (uniform resource locator)

Web authoring software
Programs such as Macromedia’s Dreamweaver that work like desktop publishing page layout programs to allow users to create, edit, and manage Web pages and sites without having to write HTML code.

Web bug
An invisible piece of code embedded in HTML-formatted email that is programmed to send information about its receiver’s Web use back to its creator.

Weblog (or blog)
See blog.

Web server
A server that stores Web pages and sends them to client programs—Web browsers—that request them.

Web services
New kinds of Web-based applications that can be assembled quickly using existing software components.

World Wide Web (WWW)
Part of the Internet, a collection of multimedia documents created by organizations and users worldwide. Documents are linked in a hypertext Web that allows users to explore them with simple mouse clicks.

XHTML
Markup language that combines features of HTML and XML; its advantage is its backward compatibility with HTML.
Know it

computer monitoring
Using computer technology to track, record, and evaluate worker performance, often without the knowledge of the worker.

computer-aided instruction (CAI)
Software programs for teaching that combine drill-and-practice software and tutorial software.

automated offices
Offices that use extensive computer systems and networks to streamline information flow and automate many processes.

chief information officers (CIOs)
Along with chief technology officers (CTOs), the chief decision makers concerning enterprise computer systems and technology in a business enterprise.

computer monitoring
Using computer technology to track, record, and evaluate worker performance, often without the knowledge of the worker.

computer-aided instruction (CAI)
Software programs for teaching that combine drill-and-practice software and tutorial software.

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<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>instruction (CAI)</td>
<td>Software programs for teaching that combine drill-and-practice software and tutorial software.</td>
</tr>
<tr>
<td>courseware</td>
<td>Educational software.</td>
</tr>
<tr>
<td>de-skilled</td>
<td>Transformed in such a way that a job requires less skill.</td>
</tr>
<tr>
<td>distance education</td>
<td>Using computers, networks, and other technology to extend the educational process beyond the walls of a school, connecting students and faculty at remote locations.</td>
</tr>
<tr>
<td>distributed computing</td>
<td>Integrating all kinds of computers, from mainframes to PCs, into a single, seamless system.</td>
</tr>
<tr>
<td>drill-and-practice software</td>
<td>Teaching software based on the principles of individualized rate, small steps, and positive feedback.</td>
</tr>
<tr>
<td>educational simulations</td>
<td>Software that enables students to explore artificial environments that are imaginary or based on reality. Most have the look and feel of a game, but they challenge students to learn through exploration, experimentation, and interaction with other students.</td>
</tr>
<tr>
<td>edutainment</td>
<td>Programs geared toward home markets that combine education and entertainment.</td>
</tr>
<tr>
<td>electronic commerce (e-commerce)</td>
<td>Business transactions through electronic networks.</td>
</tr>
<tr>
<td>electronic cottage</td>
<td>A home in which modern technology enables a person to work at home.</td>
</tr>
<tr>
<td>electronic sweatshops</td>
<td>Worker warehouses where most of the work is mindless keyboarding, computer monitoring is a common practice, wages are low and working conditions poor, and repetitive stress injuries are common.</td>
</tr>
<tr>
<td>extranets</td>
<td>Private TCP/IP networks designed for outside use by customers, clients, and business partners of an organization. These networks are typically for electronic commerce.</td>
</tr>
<tr>
<td>filtering software</td>
<td>Software that for the most part, keeps offensive and otherwise inappropriate Web content from being viewed by children, on-duty workers, and others.</td>
</tr>
<tr>
<td>globalization</td>
<td>The creation of global businesses and markets.</td>
</tr>
<tr>
<td>groupware</td>
<td>Software designed to be used by work groups rather than individuals.</td>
</tr>
<tr>
<td>interactive TV</td>
<td>Broadcast television with built-in options for game playing or other forms of interactivity.</td>
</tr>
<tr>
<td>intranet</td>
<td>A self-contained intraorganizational network that is designed using the same technology as the Internet.</td>
</tr>
<tr>
<td>Luddites</td>
<td>A nineteenth century English labor group that smashed new textile machinery to protect their jobs; today the term is often used to describe someone who opposes new technology in general.</td>
</tr>
<tr>
<td>narrowcasting</td>
<td>Providing custom newscasts and entertainment features aimed at narrow groups or individuals.</td>
</tr>
<tr>
<td>paperless office</td>
<td>An office of the future in which magnetic and optical archives will replace reference books and file cabinets, electronic communication will replace letters and memos, and digital publications provided through the Internet and on-line services will replace newspapers and other periodicals.</td>
</tr>
<tr>
<td>regional work centers</td>
<td>Shared offices established by corporations and government organizations in various locales to reduce commuting times.</td>
</tr>
<tr>
<td>satellite offices</td>
<td>Workplaces that enable workers to commute to smaller offices closer to their homes.</td>
</tr>
<tr>
<td>smart card</td>
<td>A card that looks like a standard credit card but features an embedded microprocessor and memory instead of a magnetic strip.</td>
</tr>
<tr>
<td>technophobia</td>
<td>The fear of technology.</td>
</tr>
<tr>
<td>telecommuting</td>
<td>Working from home by modem, as do many programmers, accountants, and other information workers.</td>
</tr>
<tr>
<td>up-skilled</td>
<td>Transformed in such a way that a job requires more skill.</td>
</tr>
</tbody>
</table>
Chapter 12

INFORMATION SYSTEMS IN BUSINESS

- **acquisition**
  - The process of capturing data about an event that is important to the organization.
  - In a transaction processing system, a document that initiates an action by the recipient or verifies for the recipient that a transaction has occurred.

- **action document**
  - Accumulating transactions and feeding them into a computer in large batches.

- **batch processing**
  - A company or firm; a system designed for the purpose of creating products and services for customers.

- **business organization**
  - Along with chief technology officers (CTOs), the chief decision makers concerning enterprise computer systems and technology in a business enterprise.

- **chief information officers (CIOs)**
  - Policies and procedures, such as those developed by companies and organizations such as the ACM (Association for Computing Machinery), to guide the behavior of information workers.

- **code of ethics**
  - A mathematical model of a project's schedule used to calculate when particular activities will be completed.

- **critical path method (CPM)**
  - A strategic planning approach that identifies the variables that are crucial for the success of the business from the top managers' point of view and identifies IT plans for systems that provide access to information about those critical success factors.

- **critical success factors (CSF)**
  - Software used to create and maintain large databases.

- **data warehousing**
  - A set of specifications for conducting basic business transactions over private networks.

- **decision support system (DSS)**
  - Creating information systems to support an organization's operational business processes.

- **decision support system (DSS)**
  - A computer system that provides managers with the tools that they need to analyze information they deem relevant for a particular decision or class of decisions.

- **effectiveness**
  - How an organization's customers evaluate the quality of the output--products and services--of the value chain.

- **efficiency**
  - How an organization's primary and support activities produce desired output with less work or lower costs.

- **electronic data interchange (EDI)**
  - A set of specifications for conducting basic business transactions over private networks.

- **enterprise resource planning (ERP)**
  - Creating information systems to support an organization's operational business processes.

- **executive information system (EIS)**
  - A system that combines features of management and decision support systems to support unstructured decision-making by top managers.

- **expert systems (ES)**
  - Information systems of software programs designed to replicated the decision-making process of a human expert.

- **Gantt chart**
  - A type of chart capable of representing a project schedule visually, by showing each step or category of steps in a plan, along with their planned and actual start and completion times.

- **geographical information system (GIS)**
  - A specialized database that combines tables of data with demographic information and displays geographic and demographic data on maps.

- **group decision support system (GDSS)**
  - Systems designed to improve the productivity of decision-making meetings by enhancing the dynamics of collaborative work.

- **information overload**
  - The state of being bombarded with too much computer output, a risk of poorly designed information systems.

- **information system**
  - A collection of people, machines, data, and methods organized to accomplish specific functions and to solve specific problems. Programming is part of the larger process of designing, implementing, and managing an information system.
**ELECTRONIC COMMERCE AND E-BUSINESS**

**E-commerce transactions that involve businesses providing goods or services to other businesses.**

**E-commerce transactions that involve businesses providing goods or services to consumers.**

**Another name for the B2B model when the focus is primarily on handling the activities that take place within the organization.**
consumer-to-consumer (C2C)  | The e-commerce model which represents individuals, organizations, or companies that are selling and buying directly with each other via the Internet.

customer relationship management (CRM)  | Software systems for organizing and tracking information on customers.

dot coms  | Internet-based companies.

e-commerce software electronic commerce (e-commerce)  | Business transactions through electronic networks.

electronic payment system  | An online credit card transaction in which a trusted third party transfers funds from one person or business to another, thereby concealing the credit card information of the buyer to the seller.

extranets  | Private TCP/IP networks designed for outside use by customers, clients, and business partners of an organization. These networks are typically for electronic commerce.

intranet  | A self-contained intraorganizational network that is designed using the same technology as the Internet.

m-commerce  | Mobile commerce, in which workers use laptops and wireless handheld devices to take their offices with them wherever they travel.

virtual private network (VPN)  | A network that uses encryption software to create secure "tunnels" through the public Internet or between intranets, a method an organization can use to set up an extranet.

Web hosting service  | A service that provides the e-commerce software expertise to run an online business.

Chapter 14  | SYSTEMS DESIGN AND DEVELOPMENT

algorithm  | A set of step-by-step instructions that, when completed, solves a problem.

alpha testing  | Initial testing of a system; also called "pre-beta testing."

applet  | A small compiled program to run inside another application- typically a Web browser.

assembler  | A program that translates each assembly-language instruction into a machine-language instruction.

assembly language  | A language that is functionally equivalent to machine language but is easier for people to read, write, and understand. Programmers use alphabetic codes that correspond to the machine's numeric instructions.

beta testing  | Testing of almost-finished software by potential end users.

C  | A complex computer language invented at Bell Labs in the early 1970s as a tool for programming operating systems such as UNIX; now one of the most widely-used programming languages.

C++  | A variation of the C programming language that takes advantage of a modern programming methodology called object-oriented programming.

coding  | Writing a program from an algorithm.

compiler  | A translator program that translates an entire program from a high-level computer language before the program is run for the first time.

component software  | Software designed in small, independent units (components) that can be plugged into applications and operating systems to add features as needed.

computer architecture  | The branch of computer science that deals with the way hardware and software work together.
A relatively new discipline that focuses on the process of computing through several areas of specialization, including theory, algorithms, data structures, programming concepts and languages, computer architecture, management information systems, artificial intelligence, and software engineering.

Commercially available software packages that typically include charting and diagramming tools, a centralized data dictionary, a user interface generator, and code generators.

Logical structures that control the order in which instructions are carried out.

A catalog, or directory, that describes all the data flowing through a system.

A simple graphical depiction of the movement of data through a system.

A set of data elements used together, such as an invoice or other paper or electronic document.

A table that shows, in a row-column format, the decision rules that apply and what actions to take when certain conditions occur.

A person who uses the information system directly or uses the information produced by the system.

A systems development approach in which a project team comprising only end users develops many small-scale systems without the direct involvement of a professional systems analyst.

The fourth generation of programming languages (after machine, assembly, and high-level languages), which use English-like phrases and sentences to issue instructions, are non-procedural, and increase productivity.

A programming language that falls somewhere between natural human languages and precise machine languages, developed to streamline and simplify the programming process.

A collection of people, machines, data, and methods organized to accomplish specific functions and to solve specific problems. Programming is part of the larger process of designing, implementing, and managing an information system.

A translation program that translates and transmits each source code statement individually into machine language.

A platform-neutral, object-oriented programming language developed by Sun Microsystems for use on multiplatform networks.

Errors in the logical structure of a program that cause differences between what the program is supposed to do and what it actually does.

The language that computers use to process instructions. Machine language uses numeric codes to represent basic computer operations.

User-oriented languages that enable users to create programs (macros) that automate repetitive tasks; also known as scripting languages.

Also known as a management reporting system, a system that gives a manager the information he or she needs to make decisions, typically structured decisions, regarding the operational activities of the company.

In structured programming, a program is built from smaller programs called modules.

Programming in which a program is not just a collection of step-by-step instructions or procedures; it's a collection of objects. Objects contain both data and instructions and can send and receive messages.

Hiring talent for selected activities on a contract basis.

The process of proving the correctness of a program.

A specialized form of problem solving, typically involving the four steps of defining the problem; devising, refining, and testing the algorithm; writing the program; and testing and debugging the problem.
**Chapter 15**

**IS ARTIFICIAL INTELLIGENCE REAL?**

The field of computer science devoted to making computers perceive, reason, and act in ways that have, until now, been reserved for human beings.

**Artificial Intelligence (AI)**

Also speech recognition. The identification of spoken words and sentences by a computer, making it possible for voice input to be converted into text files.

**Automatic Speech Recognition**

The process of using software to translate written or spoken communication from one natural language to another.

**Automatic Translation**

Computerized sound output.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>digitized speech</td>
<td>Computerized voice output that mimics human speech.</td>
</tr>
<tr>
<td>expert system shells</td>
<td>Generic expert systems containing human interfaces and inference engines.</td>
</tr>
<tr>
<td>expert systems (ES)</td>
<td>Information systems of software programs designed to replicate the decision-making process of a human expert.</td>
</tr>
<tr>
<td>heuristic</td>
<td>A rule of thumb.</td>
</tr>
<tr>
<td>image analysis</td>
<td>The process of identifying objects and shapes in a photograph, drawing, video, or other visual image.</td>
</tr>
<tr>
<td>knowledge base</td>
<td>A database that contains both facts and a system of rules for determining and changing the relationship among those facts.</td>
</tr>
<tr>
<td>machine learning</td>
<td>Artificial intelligence techniques that make it possible for machine performance to improve based on feedback from past performance.</td>
</tr>
<tr>
<td>natural language</td>
<td>Language that people speak and write everyday.</td>
</tr>
<tr>
<td>neural networks (neural</td>
<td>Distributed, parallel computing systems inspired by the structure of the human brain.</td>
</tr>
<tr>
<td>nets) recognition (OCR)</td>
<td>Software that locates and identifies printed characters embedded in images.</td>
</tr>
<tr>
<td>software</td>
<td></td>
</tr>
<tr>
<td>parallel processing</td>
<td>Using multiple processors to divide jobs into pieces and work simultaneously on the pieces.</td>
</tr>
<tr>
<td>parsing program (parser)</td>
<td>In translation, a program that analyzes sentence structure and identifies each word according to its part of speech. Another program looks up each word in a translation dictionary and substitutes the appropriate word.</td>
</tr>
<tr>
<td>pattern recognition</td>
<td>Identifying recurring patterns in input data with the goal of understanding or categorizing that input.</td>
</tr>
<tr>
<td>robots</td>
<td>Computer-controlled machines designed to perform specific manual tasks.</td>
</tr>
<tr>
<td>semantics</td>
<td>The underlying meaning of words and phrases.</td>
</tr>
<tr>
<td>speech recognition</td>
<td>The identification of spoken words and sentences by a computer, making it possible for voice input to be converted into text files.</td>
</tr>
<tr>
<td>speech synthesis</td>
<td>The use of software or hardware to allow PCs to recite anything to be typed, through with voices that sound artificial and robotic.</td>
</tr>
<tr>
<td>syntax</td>
<td>A set of rules for constructing sentences from words. Every language has a syntax.</td>
</tr>
<tr>
<td>synthetic speech</td>
<td>Speech generated by computers by converting text into phonetic sounds.</td>
</tr>
<tr>
<td>Turing test</td>
<td>A way to test machine intelligence.</td>
</tr>
</tbody>
</table>