Bio 595 **Computers in Biomedical Research** **Fall 2003**

Glossary of Computer and Bioinformatics Terms

About This Macintosh : the first item on the Macintosh Apple pull-down menu. Clicking on this yields a window displaying the system version number and a bar chart showing usage of memory by the System Software and any resident applications.

Accelerator : an add-on or plug-in board that increases operating speed of the computer by using a faster CPU chip or a faster video refresh rate.

Access time: time between the moment when data to or from storage (e.g. floppy or hard disk drive, or CD-ROM) is requested and the instant when the transfer of data is complete; expressed in milliseconds.

Acoustic coupler: a connection between a modem and a telephone line that allowed use of a standard telephone handset instead of directly connecting to the telephone network. Now obsolete, replaced by electronic interfaces.

Acrobat: software (from Adobe Systems) used to view or write pdf text and graphics files.

Activate : to make a nonactive window active by clicking anywhere inside it.

Active Matrix: high quality flat-panel display, used for laptop computers; in an LCD display, the images on the screen are created by diodes on a grid of fine wires. A current passing through the diodes activates them. Active-matrix displays use transistors.

Active window : the frontmost window on the desktop; the window where the next action will take place. An active window's title bar is highlighted.

ActiveX: technology from Microsoft, links desktop applications to the World Wide Web. Used to provide interactive Web content for applications software. For example, Word and Excel documents can be viewed directly in a browser if ActiveX is enabled..

ADA : a high level programming language developed under auspices of the Defense Department (named after Ada Byron, who worked with Charles Babbage program his analytical engine). ADA iks a general purpose programming language.

Address bus : the path along which the addresses of specific memory locations are transmitted. The width of the path determines how much memory can be used (addressed) directly by the computer. For an n-bit-wide address bus, the computer can use 2n locations in memory where information can be stored.

Address: location in computer memory that can be referred to (accessed) in a program.

Addressing, 32 bit : communication channel width between CPU and RAM memory on newer Macintoshes that allows maximum RAM size to exceed 8 MBytes (the limit on older Macintoshes).

ADSL: Asymmetrical Digital Subscriber Line, a high speed communications line, used primarily for digital video.

AIX: a multi-user operating system, IBM's proprietary version of UNIX.

Alert box : A box that appears on the screen to give a warning or to report an error message. Its appearance is usually accompanied by a sound warning such as a beep.

ALGOL: algorithmic programming language, historically popular in Europe for engineering, science and mathematics programming applications.

Algorithm : a step-by-step procedure for solving a problem or accomplishing a task.

Alias : (n.) An alternate name used to invoke or identify a command, a network host, a list of users, or some other applicable entity. (v.) To provide an entity with an alternate name.

Alignment: a pairing of two homologous nucleotide or protein sequences for the purpose of identifying the location of accumulated changes since they last shared a common ancestor.

Alta Vista: popular search engine on the Web at http://www.altavista.digital.com/

ALU: Arithmetic and logic unit, electronic circuitry in the central processing unit (CPU) of a computer; performs mathematical operations, logical comparisons between data, etc.

American Standard Code for Information Interchange : see ASCII.

Analog to Digital Converter (ADC): a circuit that converts continuously varying analog signals into discrete digital values to be stored in binary form in a computer. A high speed ADC may sample and convert values as rapidly as 20 million times/second (20 Mhz) and be used to digitize video signal;s; a slower ADC at 20 thousand samples/second (20 Khz) might be used to sample audio sounds for computer storage.

Anchor: a location within an html document that you jump to when following an internal link.

AND : a logical operator that produces a true result if both of its operands are true, and a false result if either of its operands is false. Compare exclusive OR, NOT, OR.

Annotation: a worded description of a clone, which may include identifying attributes like the locus name, keywords, and Medline references.

ANSI: (American National Standards Institute): this organization develops data processing standards, which are quite often used as industry guidelines.

Anti-aliasing: process of eliminating jagged edges of diagonal lines or curves displayed on a computer monitor; software accomplish this might shadowing pixels adjaccent to the jagged line.
AOL: America-On-Line, the largest on-line service.
Apple menu : pulldown menu at far left of Macintosh menu bar, available in Finder and all applications programs; gives access to desk accessories.
Apple Menu Items : See desk accessory.
Applet : a small program, usually written in Java, which can be downloaded from a Web page and executed.
AppleTalk : network communications protocol used between Macintoshes; built into every Macintosh computer and printer.
Appletalk zone: group of macintoshes and printers set up as a single workgroup entity by others on the network. Divides a large network into smaller, mor efficient (faster) subgroups.
Application program : (1) a program that performs a specific task, such as word processing, database management, or graphics. Also called an application. (2) a program that runs stand-alone. An application's file type is ' APPL ' .
Application space : memory that's available for dynamic allocation by applications.
Application: short for application program.
Applications menu : rightmost pulldown menu in the Macintosh menu bar; lets you switch among any applications and desk accessories running at the moment.
Archie: a search program connected to FTP.
Argument : a value on which a function or statement operates; it can be a number or a variable. For example, in the BASIC statement VTAB 10, the number 10 is the argument.
Argument list : all the arguments passed to a program.
Arithmetic expression : a combination of numbers and arithmetic operators (such as 3 + 5) that indicates some operation to be carried out.
Arithmetic operation : one of the five actions computers can perform with numbers: addition, subtraction, multiplication, division, and exponentiation.
Arithmetic operator : an operator, such as +, that combines numeric values to produce a numeric result. Compare Boolean operator, relational operator.
arj: a compressed file or program format which must be decompressed or "exploded" with the arj program before being either read or used. Groups of files may be compressed together, commonly done with the “zip” program.
ARPA: Advanced Research Projects Agency, the Defense Agency responsible for funding basic technological research, created in the 1960's, their early computer network (ARPANet) which connected research university laboratories was the forerunner of the Internet.
Array : an ordered collection of information of a given, defined type. Each element of the array can be referred to by a numerical subscript.
Arrow keys : the four directional keys in the lower-right corner of the keyboard. Use the arrow keys to move around in an application.
ASCII : acronym for American Standard Code for Information Interchange (pronounced "ASK-ee"). A standard that assigns a unique binary number to each text character and control character. ASCII code is used for representing text inside a computer and for transmitting text between computers or between a computer and a peripheral device. See also high ASCII characters, low ASCII characters.
asf: an .asf file extension (Advanced Streaming Format) requires the Microsoft player (as opposed to Real Player or other media players) to play a video file..
Assembler: see Translator.
Assembly language : a low-level programming language in which individual machinelanguage instructions are written in a symbolic form that's easier to understand than machine language itself. Each assembly-language instruction produces one machine-language instruction. Because assembly-language programs require very little translation, they can be very fast.
au: The .au extension is a type of audio file.
Auto-repeat feature : a feature of keys on computer keyboards; when a key is pressed down and held, the computer will automatically repeat that key's character until the key is released.
avi: the .avi extension is a type of video file.
BAC: Bacterial Artificial Chromosome; see cloning vector.
Background activity : a program or process that runs while the user is engaged with another application.
Backslash (\): The "backward slash" character, is often used as an escape character, and in Unix and Windows directory pathnames.
Backspace : To move to the left in a line of text, erasing the character or selection; thus synonymous with delete.
Backup: The process of creating a duplicate copy of programs or data on the same or different storage media for the purpose of safe-keeping: any resource needed for disaster recovery.

Balloon help: (Mac OS9) When active, shows purpose or function of items on the desktop or in an active applications program when mouse is positioned over screen area.

Banner: announcement or Information displayed when logging into a system.

Basal promoter: a set of nucleotide sequences such as the “TATA-box” that serves as a minimal promoter within eukaryotic cells, and to which basal transcription factors bind.

Base Pair (bp): two nitrogenous bases (adenine and thymine or guanine and cytosine) held together by weak bonds. Two strands of DNA are held together in the shape of a double-helix by the bonds between base pairs. The human genome contains an estimated 3 billion base pairs (bp). One million bp is often referred to as 1 Mb and one thousand as 1 kb.

BASIC: An acronym for Beginner's All-Purpose Symbolic Instruction Code. As a language, it is widely used by many microcomputers. Different commercial versions of BASIC are "dialects" like True BASIC, RealBASIC, Future BASIC, QuickBASIC, Visual BASIC.

Batch mode: A method of processing data in which an accumulation of items is grouped together for eventual processing as a single unit. It is a mode that contrasts with "real time" processing in which instructions are immediately processed.

Baud : (1) A unit of data transmission speed: the number of discrete signal-state changes (signal events) per second. Often, but not always, equivalent to bits per second. (2) The maximum speed at which data can be sent down a channel, such as a telephone line; often confused with the actual speed at which the data is transmitted between two computers, measured in bits per second.

BBS (bulletin board service) : Communication service on a computer that allows other users to leave messages and share files. Requires a modem and communications software.

Benchmark program: A sample program used to test and compare the performance of different computers or software packages.

Beta turns: U-turn-like structures within proteins formed when a beta strand reverses direction in an anti-parallel beta sheet.

Beta: "Beta testing" or "in beta" means that a program isn't ready for sale or distribution because there are still some bugs in it. Because of the fast development of the web, most of the browsers, applets, etc almost always seem to be "in beta.""Alpha testing" therefore means a very rough program; "Gamma" implies everything is finished, except perhaps for the technical writing (manuals etc)

Binary digit : The smallest unit of information in the binary number system; a 0 or a 1. Also called a bit.

Binary file : (1) a file whose data is to be interpreted in binary form. Machine-language programs and pictures are stored in binary files; (2) a file in binary file format.

Binary notation: Representation of numeric values in the base 2 number system, using only zeroes and ones. Computers use base 2 numbers internally because two states (such as on and off) are easily implemented.

Binary operator : An operator that combines two operands to produce a result. For example, + is a binary arithmetic operator; < is a binary relational operator; OR is a binary logical operator. Compare: unary operator.

Binary system : (1) A number system that uses only 0 and 1 as digits. Because computers can keep track of only two states (on or off), engineers code data in terms of 0's and Us. (2) The representation of numbers in the base-2 system, using only the two digits 0 and 1. For example, the numbers 0, 1, 2, 3, and 4 become 0, 1, 10, 11, and 100 in binary notation. The binary system is commonly used in computers because the values 0 and 1 can easily be represented in a variety of ways, such as the presence or absence of current, positive, or negative voltage, or a white or black dot on the display screen. A single binary digit-a 0 or a 1-is called a bit. Compare decimal system, hexadecimal system.

Binding operator: in Perl, the =~ operator which matches a string to a regular expression.

Bit image : a collection of bits in memory that represents a two-dimensional surface. For example, the screen is a visible bit image.

Bit: A contraction for binary digit. A single digit of a binary number: 0 or I.

Bitmap : (1) A set of bits that represents the graphic image of an original document in memory. (2) A set of bits that represents the positions and states of a corresponding set of items, such as pixels. In QuickDraw, a pointer to a bit image, the row width of that image, and its boundary rectangle. Used by the Macintosh to construct graphic images and fonts. Compare pixel map. See also bit image, volume bitmap.

Bit-mapped : graphics screen image made up of pixels (dots).

Bitmapped character : A character that exists in a computer file or in memory as a bitmap, is drawn as a pixel pattern on the graphics screen, and is sent to the printer as graphics data.

Bitmapped display : A display whose image is a representation of bits in an area of RAM called the screen buffer. With such a display, each dot, or pixel, on the screen corresponds, or is mapped," to a bit in the screen buffer.

Bitmapped font : A font made up of bitmapped characters. Fonts stored in a Macintosh system file are bitmapped fonts, for example.

Bitnet: an older network protocol ("Because It's Time"- Net), connecting academic IBM mainframes, not directly connected to the Internet, now phased out and replaced/merged with the internet.

BLAST: the Basic Local Alignment Search Tool is a fast technique for detecting ungapped subsequences that match a given query sequence.

Block: a set of programming statements enclosed in curly braces

Blotting and hybridization: the transfer of molecules (e.g. nucleic acids) from a gel onto a membrane followed by washing with a labeled probe that binds specifically to a molecule of interest.

bmp: .bmp is an extension on standard graphics files for Microsoft products.

Bomb : Software error resulting in display of a "system error alert box" with an icon of a bomb and a lit fuse. The computer must be rebooted.

Bookmarks: lists of locations of websites saved by the user to allow easy return to a site; used in connection with web browsing programs like Netscape Navigator or Internet Explorer.

Boolean operator : An operator, such as AND, that combines logical values to produce a logical result, such as true or false. Named for mathematician and logician George Boole. Also known as a logical operator. Compare arithmetic operator, relational operator.

Bootleg: an illegally copied piece of software, not purchased from the vendor.

Bootstrapping (or booting): The process of starting an inoperative system by an automatic subroutine in which the first instructions call a series of additional instructions into the computer. The process is so named because of its similarity to pulling oneself up by the boot straps. To "boot" is to start the computer by loading the operating system, in the case of the Macintosh this is the Finder.

Bot: an automated software program that can execute certain commands when it receives a specific input.; most often seen at work in the Internet-related areas of online chat and web searching.

Box: a graphical area displayed on the computer screen, not usually resizeable or movable, like a window, but used to display information or request user input or action.

Bps: bits per second -- the rate your modem can send and accept information. Twenty years ago a common speed was 300 (about 30 characters per second);. 56K is the current basic speed over standard phone connections. Computer nets using Ethernet connections operate at 1Mb (1,000,000 bits/sec). The "backbone" if the Net operates at 45Mb.

Branch : (v.) to pass program control to a line or statement other than the next in sequence. (n.) A statement that performs the act of branching. See also conditional branch, unconditional branch.

Breakpoint: a specific line within a block of code where program execution in an interpreter (like VB during runtime) automatically stops. Breakpoints are user selectable and can be toggled on or off (F9 key in VB).

Bridge : hardware and software that allows multiple workgroups of computers to connect to each other. Divides a larger network into smaller, more efficient groups, which can communicate with other groups when necessary.

Brownout: on the net, when a system is overloaded by requests that it slows down to the point of being almost unusable, it is suffering a "brownout."

Browse: to view data screens or pages quickly, as in looking briefly at numerous world wide web sites.

Browser: application software allowing user to download world wide web pages and view both pictures and text. Browsers are able to interpret hypertext markup language (HTML) code so that web pages look essentially identical regardless of the computer used to download the information. The two most popular browsers are Explorer and Netscape.

Buffer: A segment of random access memory (which may or may not be an integral part of the central processing unit) reserved for storing information from a specific task (such as printing, disk storage).

Bug: An unintentional error in a computer program. Occasionally it is also used to refer to a hardware defect.

Bus (or buss): the data bus is the circuit over which electronic data is transmitted within the machine.

Button : an outlined area in a dialog box; clicking the cursor on this button will choose, confirm or cancel a command. Example: quitting a Macintosh application produces a dialog box with three buttons - Yes, No and Cancel.

Byte: a group of bits (usually 8) that specify a single character in a computer system. Used to assess the storage capacity of a computer because the number of bytes is usually equivalent to the number of characters that can be stored in random access memory.

C : a portable, high-level language that also offers very low-level operations, making it a flexible and efficient language for both application and system programming. A/UX is written almost entirely in C.

C++: an object-oriented version of C, popular for programming graphical applications.

CAAT box: a short segment of many eukaryotic promoters typically located about 80 nucleotides upstream of the transcriptional start site. Various factors bind to this segment that contains the bases C-A-A-T.

Cache: small amount (32 KBytes on older processors, hundreds of KBytes on newer machines) of very fast RAM chips; speeds up computer instructions that frequently reuse information from RAM.
CAD : computer-Aided Design, can refer to both applications software and engineering graphics hardware.
CAE : computer-aided engineering.
Call : (noun) a request from the keyboard or from a procedure to execute a named procedure. (v.) To request the execution of a subroutine, function, or procedure.
Cancel button : a button that appears in a dialog box. Clicking it cancels the command.
Canned software: a term for prewritten commercially available software.
Carboxy terminus: in a polypeptide, the end of the molecule with a carboxylic acid group(-COOH) and corresponds to the 3' end of a gene.
Card: an electronic plug-in hardware module that inserts into available slots in the central processing unit. This piece of hardware may perform various functions, ranging from modem communications to graphics output.
Carriage return (CR) : a nonprinting ASCII character (decimal 13, hexadecimal $0D) that ordinarily causes a printer or display device to place the next character on the left margin; that is, to end a line of text and start a new one. It's used to end paragraphs. A carriage return, however, does not move the print head or cursor down to the next line; the line feed (LF) character does that.
Cathode-ray tube (CRT): an electronic vacuum tube that is used to produce the video display. A familiar example is the television picture tube.
cc: in the days of typewriters, carbon copy using carbon paper for multiple copies to be typed at once. Now "computer copy" on-line refers to copies of a post when sent to more than one recipient. Also a verb: "I'll cc you a copy of that memo."
CD-E: CD-erasable format that allows a CD disk medium to be reused; also called CD-rewritable.
Cdev: control panel device on the Macintosh, e.g., sound, monitor, etc.
cDNA library: a collection of DNA sequences generated from mRNA sequences. This type of library contains only protein-coding DNA (i.e. genes).
cDNA: complementary DNA; DNA synthesized from an RNA template by a reverse transcriptase enzyme.
cDNA: complementary DNA; synthesized from a mRNA template. CentiMorgans (cM): the measurement between markers on a genetic map. Two markers are said to be 1 cM apart if they are separated by recombination 1% of the time, roughly equal to a distance of 1 million bp.
CD-R : CD-recordable drive, one which both reads from and writed to CD disks..
CD-ROM: compact disc read-only memory, looking like a compact audio disc, but stores up to 550 MBytes of information. To the computer, the CD-ROM 'liiks' like a very large hard (locked) disk.
Central processing unit (CPU): circuits in a computer that manipulate data, execute instructions, and control the sequence of operations. It is the computer's main unit (brain) and most vital hardware device.
cfm: a web page with an .cfm extension has been set up via a Cold Fusion Webserver to do some processing on the server side (such as taking an on-line order).
CGI : Common Gateway Interface, the standard mechanism for processin g data entered in an HTML form on a Web server and returning the results.
Character key : (1) any of the keys on a computer keyboard-such as letters, numbers, symbols, and punctuation marks-used to generate text or to format text; any key except Caps Lock, command, control, esc, option, and shift. Character keys repeat when you press and hold them down. (2) A key that generates a keyboard event when pressed; that is, any key other than a modifier key. Compare modifier key.
Character string : two or more characters read or sent in sequence; for example, esc Z 3 controlK4 is a character string.
Character: any letter, numeric digit, command key, or punctuation mark.
Check boxes : toggle switches (on-off) displayed in dialog box; unlike radio buttons, any or all of a groupm of check boxes can be on at one time. (X=on, no X=off).
Chip: an integrated circuit or circuits on a water-thin slice of semiconductor material (usually silicon): the basis for the microcomputer.
Choose : to pick a command by dragging through a menu. You often choose a command after you've selected something for the program to act on; for example, selecting a disk and choosing the Open command from the File menu.
Chooser : a Macintosh desk accessory that lets the computer system be configured to print on any printer for which there's a printing resource on the current startup disk. From an AppleTalk network system, use the Chooser to connect and disconnect from the network and choose among devices connected to the network. A user name that the System uses from time to time-when printing on a LaserWriter, for example-can also be specified.
Chou-Fasman parameter: a set of numeric parameters indicating the empirically observed tendency of an amino acid to be involved in an alpha helix, a beta strand, and in each position of a hairpin turn.

Class: a template for user-defined objects, defining the objects' properties and methods. All instances created from the class use the properties and methods defined by the class.

Clear : a command in the Edit menu that removes selected material without placing it on the Clipboard. You can use the Undo command immediately after using Clear to reverse the action.

Click : (v.) to position the pointer on something, and then press and quickly release the mouse button. (n.) the act of clicking.

Clicking : pressing and immediately releasing the Macintosh mouse button.

Client: the computer receiving information from the net is the client; the sender is the server.

Clipboard : the holding place for what you last cut or copied; a buffer area in memory. Information on the Clipboard can be inserted (pasted) into documents.

Clipping region : the region to which an application limits drawing within a graphics port.

Clock speed: the rate at which the motherboard's crystal clock synchronizes operations of the CPU, data fetching from memory; measured in megahertz. For example, a Pentium chip may have a clock rate of 300 Mhz.

Clones: a group of cells derived from a single ancestor.

Cloning vector: a DNA molecule originating from a virus, plasmid, cosmid, phage, bacteria, or yeast into which a foreign DNA fragment is integrated and then introduced into host cells, where it can be reproduced in large quantities (cloned).

Cloning: insertion of a specific DNA fragment into chromosome-like carriers that allow their maintenance and replication within living cells.

Close box : the small white box on the left side of the title bar of an active window. Clicking it closes the window.

Cluster: a group of clones related to one another by sequence homology. Each cluster has a unique Cluster ID number for a given stringency.

COBOL: (Common Business-Oriented Language): A computer language designed for general commercial data processing and most often used in the financial industry.

Code : (1) a number or symbol used to represent some piece of information. (2) The statements or instructions that make up a program.

Code resource : a resource that contains a program's code. It is most commonly a resource of type '@ CODE ' (for applications and MPW tools), but other resource types such as ' DRVR ' and | PDEF ' also contain code.

Code segment : (1) an individual | CODE ' resource, which is part of the code of a Macintosh application. Segments are loaded in and out of memory by the Segment Loader. (2) An object segment that contains program code. Code segments are provided for programs that differentiate between code and data segments.

Codon: a sequence of three DNA bases within a gene that codes for a single amino acid.

Collision: result of two computers on a network attempting to transmit or receive data at the same time; when this happens, the signals are lost and must be retransmitted. Networks use collision detection strategies in their protocols to prevent this.

Color Picker : a Macintosh dialog box that appears when the desktop colors in the General Controls control panel are double-clicked. The color wheel lets the hue, saturation, and brightness of the color be adjusted.

Color, 24 bit : Capability of video to display over 16 million colors at one time on the screen. Requires a 24 bit video card.

Column: cells in a spreadsheet arranged in a vertical line, often referenced by a letter (e.g. cells A1 through A10 in Excel are in column A).

Command : (1) an instruction that causes a device such as a computer or printer to perform some action. A command can be typed from a keyboard, selected from a menu with a hand-held device (such as a mouse), or embedded in a program. (2) In the Standard C Library, a parameter that tells a function which of several actions to perform. (3) In the MPW Shell, a word that tells MPW which utility to execute. (4) An instruction that causes the target device to perform a specific operation. Commands are passed to the firmware in calls.

Command key : a key that, when held down while another key is pressed, causes a command to take effect. When held down in combination with dragging the mouse, the command key lets you drag a window to a new location without activating it. The command key is marked with a propeller-shaped symbol. On some keyboards, the command key has both the propeller symbol and the Apple symbol on it.

Comment : information that is ignored by a program such as a compiler. A comment normally includes instructions, references, or notes for people inspecting a source file.

Communications software: applications software allowing your computer to exchange information (files, keyboard/screen dialog) with other computers via telephone lines and modems.

Compact : to rearrange allocated memory blocks in order to increase the amount of contiguous unallocated (free) memory. The Memory Manager compacts memory when needed.

Compile : to convert a program written in a high-level programming language (source code) into a file of commands in a lower-level language (object code) for later execution.

Compiler : a language translator that converts a program written in a high-level programming language (source code) into an equivalent program in some lower-level language such as machine language (object code) for later execution. Compare interpreter.

Compressed file: a file that has been modified to take up less space when stored on a disk or drive. The compressed file usually can't be manipulated or accessed until it is decompressed.

Computer language: a defined set of characters, symbols, or words, and the rules for combining them into meaningful instructions on a computer. See, for example, Assembly language, BASIC, and COBOL.

Concatenate : literally, "to chain together." (1) To combine two or more strings into a single, longer string by joining the beginning of one to the end of the other. (2) To combine two or more files.

Conditional branch : a branch whose execution depends on the truth of a condition or the value of an expression. Compare unconditional branch.

Conformational parameter: numeric values representing the empirically observed tendency of a particular amino acid to be found in a specific conformation like an alpha helix, a beta sheet, or a turn.

Consensus sequence: a sequence that represents the most common nucleotide or amino acid at each position in two or more homologous sequences.

Constant : in a program, a symbol that represents a fixed, unchanging value. Compare variable.

Constituitive: a gene or operon that is expressed continuously.

Context-sensitive help: an applications software feature that provides the user with information and help about the current (selected) command or operation without necessitating leaving the program. (a feature of Visual BASIC)

Control : (1) the order in which the statements of a program are executed. (2) An object in a window on a screen with which the user, by using the mouse, can cause instant action with visible results or change settings to modify a future action. (3) in VB, an object that can be manipulated at design time or runtime to enter or change data. Controls are manipulated during design time by specifying their properties.

Control array: in VB, a set of similar controls of the same type and name. Individual elements within the control array are identified by an index number or subscript.

Control character : A nonprinting character that controls or modifies the way information is printed or displayed. Control characters usually have ASCII values between 0 and 31, and can be typed from a keyboard by holding down the control key while pressing some other key. control key.

Control Manager : the part of the Toolbox that provides routines for creating and manipulating controls (such as buttons, check boxes, and scroll bars).

Control panel : on Macintosh, a desk accessory allowing you to set various computer hardware parameters like loudness, speed of cursor blinking, etc.

Cookie: data sent to your computer by a web server that records your actions on a specific web site. A lot like a preference file for an applications program. Whenever you visit the site after being sent the cookie, the site will load according to the information stored in the cookie. For example, some sites can remember information like your user name and password, so you don't have to re-enter it each timeyou visit the site.

Coordinate : one of a pair of numbers that designates a position on a grid. The numbers correspond to the columns (vertical placement) and rows (horizontal placement) in a display grid.

Coordinate axis : a figure used with graphs to define the scale, consisting of a horizontal or vertical line intersected by tick marks at regular intervals.

Coordinate plane : a two-dimensional grid. In QuickDraw, the grid coordinates are integers ranging from -32,767 to 32,767, and all grid lines are infinitely thin.

Copy protection : software-based guard against making a copy of a program from one disk to another.

Cosmid: artificially constructed cloning vector containing the cos gene of phage lambda, which is used to infect E. coli, permitting cloning of DNA fragments up to 45 kb, larger than those possible using plasmid vectors.

Counter: a variable used to keep track of how many times some action has occurred.

Courseware : educational or training software to teach some specific topic.

CpG island: a segment of 500 to 3,000 bp in which the dinucleotide CpG is found a higher than normal levels relative to the rest of the genome. Usually associated with the promoters of eukaryotic housekeeping genes.

CPU : Central Processing Unit of the computer; circuitry including the processor chip installed on the motherboard, that performs the electronic calculations. In a newer PC, the CPU chip might be an Intel Pentium or Pentium II; in older machines perhaps an 80486.

Crash: a breakdown or failure in a computer system, resulting in down time and loss of information. Often this is caused by electrical failure or information overload within the computer.

Current application : the application program currently loaded and running.

Cursor : (1) a symbol displayed on the screen marking where the user's next action will take effect or where the next character typed from the keyboard will appear. See pointer; (2) a mark on the screen that indicates your position on the command line or inside a file. The cursor is usually a small box or an underscore, and it usually blinks. See insertion point.

CUSEEME: a program which allows a static video picture to be sent or received (typically at about 1 frame per second), best used at a minimum speed of 56k. Free video conferencing software.

Cut : to remove something by selecting it and choosing Cut from a menu. What you cut is placed on the Clipboard. In other editing applications, "Delete" serves the same function.

Cycle time: The minimum period of time in which random access memory can complete a single read or write operation(a typical value would be 125 nsec).

DA (desk accessory): applications program invoked from the Macintosh Apple menu; usually requires little RAM.

Daisychain: hardware components connected in series, the first device connected to the computer, the second to the first, the third to the second, etc. Small Computer System Interface (SCSI) devices are connected in this fashion.

DAT: digital audio tape, a format used as a tape backup for backing up large (hard disk) files against loss.

Data : information, especially information used or operated on by a program. The smallest unit of information a computer can understand is a bit.

Data bus : the path along which general information is transmitted within the computer. The wider the data bus, the more information can be transmitted at once. The Macintosh II, for example, has a 32-bit data bus. Thus, 32 bits of information can be transferred at a time, so that information is transferred twice as fast as in 16-bit computers (assuming equal system clock rates).

Data type: a set of rules describing a specific piece of data, including the allowed range of values, operations which may be performed upon it, and how the data are stored. Data types in a programming language can include Integer, String, Boolean, Single and Double Precision Floating Point, etc.

Database : (1) a collection of information organized in a form that can be readily manipulated and sorted by a computer user. (2) short for database management system.

Database management system (DBMS) : a software system for organizing, storing, retrieving, analyzing, and modifying information in a database.

Debug : a colloquial term that means to locate and correct an error or the cause of a problem or malfunction in a computer program. Often synonymous with troubleshoot.

Debugger : a utility that allows a programmer to analyze a program for errors that cause it to malfunction. For example, a debugger may step through execution of the program one instruction at a time.

Decimal system : the commonly used form of number representation, in which numbers are expressed in the base-10 system, using the ten digits 0 through 9. Compare binary system, hexadecimal system.

Declaration: a statement that fixes or defines the value of a data element for use in a program. Used in source code when the value is needed at several places in the program.

Decrement : in programming, to decrease the value of a variable used as a counter. Compare increment.

Default: used to describe a preset value for some option in a computer program. It is used when a setting is not specified by the user. Example: the default font setting in Netscape Communicator is"Times." Unless you change the Netscape preferences, the "Times" font will be used by default.

Default: a setting or value, such as for control panels, preset by the computer manufacturer or software company; value can be set by user, but failure to set custom value will cause program to use this predesignated setting.

Degeneracy: the ability of some amino acids to be coded for by more than one codon.

Delete : to remove something, such as a character or word from a file, or a file from a disk. Keys such as the backspace key and the delete key can remove one character at a time by moving to the left. The Cut command removes selected text and places it on the Clipboard; the Clear command removes selected text without placing it on the Clipboard. (The Undo command can reverse the action of the Clear and Cut commands and the Backspace and delete keys if it is used immediately.)

Deselect : a command to a device such as a printer to place it into a condition in which it will not receive data. A deselect command has an effect opposite to that of a select command.

Design time: in VB, the time spent creating forms and controls, writing functions, during the creation of an application. Forms and functions can be changed only during design time. Compare to "runtime".

Desk accessory : a "mini-application" that is available from the Macintosh Apple menu regardless of which application is open-for example, the Alarm Clock, the Note Pad, and the Scrapbook. Desk accessories are files of type DFIL' and creator @ DMOV', and are installed by using the Font/DA Mover. Called Apple Menu Items under Systems 7 and 8.

Desk Manager : the part of the Macintosh Toolbox that supports the use of desk accessories from an application. desk scrap: Synonymous with Clipboard.

Desktop : the working environment on the Macintosh computer - the menu bar and the gray area on the screen. A number of documents can be open on the desktop at the same time. At the Finder level, the desktop displays the Trash and the icons and windows of disks and folders that have been accessed.

Desktop computer: a computer which fits entirely on a desk (or on the floor next to the desk), as compared with a smaller laptop or a larger mini or mainframe computer requiring substantial floor and room space.

Desktop environment : a set of Macintosh program features that make user interactions with an application resemble the way people work on a desktop. Commands appear as options in pulldown menus, and material being worked on appears in areas of the screen called windows. The user selects commands or other material by using the mouse to move a pointer around on the screen or by using keyboard equivalents.

Desktop file : a resource file in which the Finder stores the version data, bundle, icons, and file references for each application on the volume.

Desktop publishing (DTP): using the computer to produce documents for publication, e.g., camera-ready brochures, newsletters, catalogs, even entire books.

Dialog box : (1) a box that contains a message requesting more information from the user. Sometimes the message warns that the computer cannot do something or that information is about to be destroyed. In these cases, the message is often accompanied by a system beep. See alert box. (2) a box that a Macintosh application displays to request information from the user or to report that it is waiting for a process to be completed. A dialog box is internally represented in a dialog record.

Dialog Manager : the part of the Macintosh Toolbox that provides routines for implementing dialog and alert boxes.

Dial-up: modem link to an internet access provider, where their computer system/network is used to access the internet (an indirect internet link).

Digit : (1) one of the characters 0 through 9, used to express numbers in decimal form. (2) one of the characters used to express numbers in some other form, such as 0 and 1 in binary or 0 through 9 and A through F in hexadecimal.

Digital camera: a camera that records still or moving images on a large matrix of light-sensitive elements (as in a CCD) instead of on film.

Digital tape drive: A peripheral hardware device that utilizes electronic components similar to those in a cassette tape recorder for the purpose of permanently storing digital information on magnetic tape.

Dimension : the maximum size of one of the subscripts of an array.

Dimmed : used to describe words or icons that appear in gray. For example, menu commands appear dimmed when they are unavailable; folder icons are dimmed when they are open.

Dimmed icon : an icon that represents an opened disk or folder or a disk that has been ejected. Double-clicking a dimmed disk or folder icon causes the window for the disk or folder to become the frontmost, active window. A dimmed icon representing an ejected disk can be selected and opened, but the folders or documents on it cannot be opened unless the disk is inserted.

Directory: the contents of a disk or a subsection of a disk: on the Macintosh, with its Heirarchical Filing System, this could be the contents of a folder, or a folder within a folder, as well as a disk, arranged and displayable by icon, date, name, type, or size.

Disk drive: a peripheral hardware device which permanently stores digital information on magnetic disks.

Disk pack: a stack of disk platters enclosed in a case designed to be placed in commercial disk drives (usually in mainframe facilities) as a single unit.

Disk: a round, flat surface, similar in appearance to a phonograph record, which is coated with magnetic particles capable of storing digital data. There are several types of disks, varying in size, capacity, and sturdiness.

Diskette: a small flexible Mylar disk coated with magnetic material, commonly (for the Macintosh) 3 1/2 inches in diameter, encased in rigid plastic jacket. Also known as a "floppy" disk because earlier versions were 5 1/4" diameter (minidisk) and 8" diameter and encased in flexible jacket. cf: hard disk.

Distributed data processing: a process by which all computing tasks are divided between several computers, which communicate with each other to perform a related task(s) in a cooperative manner.

DLL (Dynamic Link Library): executable files containing functions that other applications (like your VB program) can call during runtime. DLLs usually don't have a graphical user interface; instead, they're invoked without user intervention.

DNS: Domain Name Service, the automatic systems to allow to input of a name in an e-mail, www, telnet, etc. address, and have it transferred to the actual address (which is really a series of numbers).

Document : a collection of information on a disk or in memory, grouped together and identified by one name; created and modified by specific types of applications software, documents could include letters, spreadsheets, drawings, etc.

Documentation: all documents, manuals, and diagrams that are associated with the use of a computer or software package. These materials are used to supplement program instructions and explain the use of the software.

Domain name: identifying name given to a cluster of computers on a network, including a top domain and all its subdomains. For example, a domain name like sciences.sdsu.edu indicates that the "sciences" network is found at San Diego State University, which is an educational institution (edu).

Domain: a system address; e -mail addresses are read from right to left. For example, ppaolini@sunstroke.sdsu.edu. Non-US addresses end in a 2 letter country code (CA=Canada, for example). Then the type of usage (com=commercial, edu=education, net=network, org=organization, gov=government, mil=military), Next comes the provider (SDSU, in this case). Next comes any internal information that the provider uses to route your messages to the appropriate server machine; @="at" sunstroke, one of the Sun computer servers handling College of Sciences mail Finally comes user information, usually just the username, which may be simple (first initial, last name) a code (ab965), or a combination (jones569).

DOS : short for PC-DOS or MS-DOS, the Disk Operating System used on IBM and compatible (clone) microcomputers in the 1980s (superseded by Windows).

Dot matrix printer: a peripheral hardware device that outputs hard copy information. This method of printing uses a matrix of dots to form the outline of the desired character. This is usually an inexpensive form of output (virtually obsolete, replaced by inkjet printers).

Dot Pitch: used to measure how sharp the display of a monitor is. It is measured in millimeters and the smaller the number, the better. Most standard cathode ray tube (CRT) monitors will have a dot pitch between .25 and .28.

Dot plot: a graph comparing two sequences. Series of diagonal lines within that graph correspond to regions of sequence similarity.

Double click : (n.) two clicks in quick succession, interpreted as a single command. The action of a double click is different from that of a single click. For example, clicking an icon selects the icon; double-clicking an icon opens it. (v.) To position the pointer where you want an action to take place, and then press and release the mouse button twice in quick succession without moving the mouse.

Double-click time : the greatest interval between a mouse-up event and a mouse-down event that would qualify two mouse clicks as a double click.

Down time: any period when a computer or other hardware device is unavailable for use.

Downloading : retrieving information from another (remote) computer and storing it on your own.

DPI (dots per inch): a measure of resolution for printer output and screen displays. For example, a laserprinter has at least 300 dpi resolution (better ones offer 600 or 1,200 dpi) and the standard Macintosh monitor 72 dpi.

Drag :to position the pointer on something, press and hold the mouse button, move the mouse, and release the mouse button. When the mouse button is released, a selection is confirmed or an object is moved to a new location.

Drag region : a region in a window frame; usually the title bar. Dragging inside this region moves the window to a new location and makes it the active window unless the command key was down.

Draw program : a graphics application program allowing the creation of graphic objects which can be easily resized and edited. Objects are stores as mathematical equations; when displayed or printed, their resolution is limited only by the resolution of the display or print device. (cf Paint program).

Driver : software telling the computer how to control a specific external device, like a printer. Different printers like inkjet or laser printers, require different software drivers.

Drives: a generic name for hardware devices that have moving mechanical parts that are designed to store data on magnetic disks, either hard or floppy.

Duration : the length or persistence of a signal in time.

Easter egg: a surprise embedded in a program, activated by some unusual combination of actions; the "surprise" can be as simple as a list of the program developers or an elaborate multimedia presentation.

EBCDIC: an acronym for Expanded Binary-Coded Decimal Interchange Code. A standardized 8-bit code that represents up to 256 characters and has been used especially on IBM systems. This is similar in function to the ASCII.

EBI: European BioInformatics Institute

Edit menu: Pulldown menu in most applications software, commonly including commands like Cut, Copy, Paste, Clear, Select all, Show clipboard.

EDP: an acronym for Electronic Data Processing.

EGCG: extensions to the GCG package

Electronegativity: measure of an atom's tendency to gain or lose electrons to fill or empty its outermost shell of electrons.

E-mail (electronic mail): a way of exchanging messages and documents with other computer users on a network. Requires applications software (e.g. Eudora or Microsoft Mail) .

EMBL: European Molecular Biology Laboratory

EMBnet: European Molecular Biology network

Encoding: the process of converting information to a coded form for easy and compact data storage or transmission.

Energy Star: an EPA program designed to encourage less energy consumption by computers asnd peripherals (especially monitors) to when inactive by powering down automatically. Pressing any key will make the system "wake up" in a few seconds.

Enhanceosomes: an assembly of transcription factors bound to the promoter of a eukaryotic gene.

Enhancer: a DNA sequence to which eukaryotic transcription factors can bind specifically; these sequences act cumulatively to increase transcription levels.

Entrez: an online resource provided by the National Center for Biotechnology Information (NCBI). It organizes GenBank sequences and links them to the literature sources in which they originally appeared.

EPSF: Encapsulated PostScript File format, used to store graphics, text information to be printed on a PostScript printer.

Error message : a message displayed or printed to tell of an error or problem in the execution of a program or in the communication with the system. An error message is often accompanied by a system beep.

Escape sequence: in Perl, a multiple character sequence allowing a programmer to insert special characters such as new lines and tabs into strings; these escape sequences start with the backslash character (\).

EST: Expressed Sequence Tag; a sampling of sequence from a cDNA.

EST: Expressed sequence tags – short DNA sequences obtained from either the 3’ or the 5’ ends of cDNAs.

Ethernet: connection computers use in a local area network (LAN). The two most widely-used forms of Ethernet are 10BaseT (data transfer speeds can reach 10 mbps - megabits per second) and 100BaseT (speeds to 100 mbps).

Event : signal triggered when a particular user action occurs (e.g. mouse button down).

Event handler : the specific software (program code) which is executed when a particular event occurs.

Exclusive OR : a logical operator that produces a true result if one of its operands is true and the other false, and a false result if its operands are both true or both false. Sometimes written as XOR. Compare AND, NOT, OR.

Executable file: a file that can be runas a program (compared, say, to a data file); identified by the extension .EXE or .COM (e.g. mypgm.exe).

Exon: parts of an hnRNA molecule spliced together to form mRNA; the protein-coding sequences of genes. Exons only comprise about 10% of the human genome. See introns.

Expert system: a form of artificial intelligence software, a program that applies sets of facts and rules to make decisions (inferences); synonym: rule-based system. The "facts" stored in the computer are supplied by (human) experts in their field.

Exponent : in scientific notation, a superscripted number denoting a power to which an immediately preceding number or value is raised. For example, in 210 (2 to the 10th power), 10 is the exponent. In computer notation, 210 is shown as 2E10, where E stands for exponent. See also scientific notation.

Expression : a formula in a program that defines a calculation to be performed.

Extensions : software such as drivers and INITS which are loaded into memory at computer start-up, so their icons appear at bottom lerft corner of screen before the Finder appears.

Ezine (or e-zine): a magazine-style set of web-pages.

Family: proteins that are more than 50% identical in their amino acid sequences.

FAQ: "Frequently Asked Questions," text files created to answer the majority of questions a newcomer to an web site might have. Web sites will often refer visitors to the FAQ before telling them to e-mail their questions, which helps cut down on tech support.

FASTA: a database search tool used to compare a nucleotide or peptide sequence to a sequence database. The program is based on the rapid sequence algorithm described b Lipman and Pearson.

FDHD: floppy disk, high density, trhe designation of the format used by the standard Macintosh drive, which can store 1.4 MB of data.

Field : (1) a data item separated from other data by blanks, tabs, or other specific delimiters. A particular type or category of information in a database management program. (2) A specific set of data that is related. A field is always defined by its size, given in bits or bytes, and usually has a name. (3) A string of ASCII characters or a value that has a specific meaning to some program. Fields may be of fixed length, or may be separated from other fields by field delimiters. For example, each parameter in a segment header constitutes a field. (4) In a BASIC file, a string of characters preceded by a return character and terminated by a return character. A field is written to a file by each PRINT statement not terminated by a semicolon. The INPUT command reads an entire field from a file. (5) In Pascal, one discrete variable within a record.

Field delimiter : a character or value that designates the start or end of a field. For example, in a BASIC file each field begins and ends with a return character.

File : any named, ordered collection of information stored on a disk. Application programs and operating systems on disks are examples of files. You make a file when you create text or graphics, give the material a name, and save it to disk; in this sense, file is synonymous with document. A Macintosh file consists of a data fork and a resource fork.

File compression: method of squeezing a file to a smaller size for efficient transfer over networks or 'phone lines, or to make disk storage as efficient as possible (must be decompressed prior to use).

File directory : the part of a volume that contains descriptions and locations of all the files and directories on the volume. There are two types of file directories: hierarchical file directories and flat file directories.

File extension: a tag added to the end of a file name providing identification of the type of material making up the file. For example, .EXE is an executable or runnable program file, ..GIF is a graphics or picture file, .TXT is a text file.

File handling system : the set of data structures, commands, and subroutines used to manipulate files and data stored on physical devices.

File I/O queue : a queue containing parameter blocks for all input/output requests to the File Manager.

File Manager : the part of the operating system that supports file input and output.

File menu : a menu in mouse-based applications that lists commands that affect whole documents-commands like Save, Print, and Quit.

File pointer: a Perl variable indicating a file to read from or write to.

File reference : a resource (type g FREF ') that provides the Finder with file and icon information about an application.

File server: a shared hard disk on a network, used for storage and retrieval.

File system :a logical device (such as a disk partition) that contains the data structures that implement all or part of the directory hierarchy.

File transfer : moving a file from one computer to another, usually over a network or telephone connection via modem.

File transfer protocol (FTP): a protocol that exchanges files with a host computer.

File type : a four-character sequence in single quotation marks, specified when a file is created, that identifies the type of file. Examples of file types are TEXT ', ' APPL ', and ' MPST ' .

File-buffered: describes a buffer style in which characters sent to an output I/O function are queued and written as a block.

Filename : the name that identifies a file. The maximum character length of a filename and the rules for naming a file vary under different operating systems. Compare pathname.

Filter : a program or "mask" that alters data in accordance with specific criteria, a formula, or an algorithm.

Finder : the application that maintains the Macintosh desktop and starts up other programs at the request of the user. Use the Finder to manage documents and applications, and to get information to and from disks. The desktop is visible upon starting up the computer, unless a different startup application is specified.

Finder information : information that the Finder provides to an application upon starting it, telling it which documents to open or print.

Firewall: used to protect a networked server from damage by those who log in to it. This can eitherbe a computer equipped with security features, software protection (called defensive coding), or both. A firewall allows only certain messages from the Internet to flow in and out of the internal network..

Firmware: processor instructions that are located in read only memory (ROM). This information may be read at will but not altered. These instructions are a cross between hardware and software because they are actually computer programs that have become part of the computer's hardware.

Fixed-point notation : a method of representing numbers inside the computer in which the decimal point (more correctly, the binary point) is considered to occur at a fixed position within the number. Typically, the point is considered to lie at the right end of the number so that the number is interpreted as an integer. Compare floating-point notation.

Fixed-point number : a signed 32-bit quantity containing an integer part in the high-order word and a fractional part in the low-order word.

Fixed-width font : a font whose characters all have the same width. For example, in Courier font the letter M is the same width as the letter I. Thus, MMMMM takes up the same space as 11111. Same as monospaced font.

Fkeys : small programs triggered by a command-key sequence, such as command-shift-3 to samve a screen image.

Flag : a variable whose value indicates whether some condition holds or whether some event has occurred. A flag is used to control the program's actions at a later time. The value of a flag is usually O or 1.

Flame: an angry or unpolite message, attacking something you said or did (or something someone believes you said or did) -- common if you break "netiquette." Some people also cause trouble by posting messages designed to draw flames (ie trolling).

Floating point: a method of mathematical calculation in which the number is represented in a form similar to scientific notation. This is distinguished from integer arithmetic in which fractional values are not allowed.

Floating-point coprocessor : a coprocessor on older Macintosh (e.g. MC68881) and PC (e.g. 80287) computers line that provides high-speed support for extended-precision arithmetic (built into newer processors).

Floating-point notation : a method of representing numbers inside the computer in which the decimal point (more correctly, the binary point) is permitted to "float" to different positions within the number. Some of the bits within the number itself are used to keep track of the point's position. Compare fixed-point notation.

Floppy disk: See Diskette.

Flow chart: pictorial representation of an ordered step-by-step solution to a problem.

Focus: the state in which an object can receive input from the mouse or keyboard. Only one object can have focus at any given time.; this object is usually highlighted.

Fold: synonymous with “structural motif”, indicating large regions of similar secondary structure found in two or more proteins.

Folder : a group of documents, applications software and/or other folders represented by a folder-shaped icon on the Macintosh Desktop. Equivalent to a Sub-Directory in the MS-DOS or PC-DOS operating systems.

Font : collections of letters, numbers, symbols with an identifiable, consistent look, e.g. a particular typeface like Helvetica, Geneva, Times, Courier, etc., in all possible sizes (9 point to 72 point) and styles (italic, bold, etc.)

Force quit: typing a command-option-escape usually lets you quit a frozen program without loss of data in other programs running.

Foreground job : a process that, while running, does not allow other activities on a terminal. The shell waits until the foreground job has finished executing before the shell returns its prompt and gives you control again of the terminal. Compare background activity.

Fork : (n.) (1) a system call that creates a new process. (2) one of the two parts of a Macintosh file: the data fork contains data accessed via the Macintosh File Manager, and the resource fork contains data used by the application, such as menus, fonts, and icons. (v.) To create a new process.

Form Layout Window: A window in VB's IDE (integrated development environment). Used to position objects on the form, graphically, rather than by code.

Form: in VB, the basis for an application's graphical user interface. Forms contain objects with which users can manipulate data or otherwise control the application. Objects are placed on the form at design time. At runtime, the objects appear where they've been placed on the form.

Formal parameter : in the declaration of a procedure, the parameter that will be used to pass information into the procedure for processing.

Format: a predetermined standardized method for performing a computer operation. Also used to describe the manner by which information is physically stored on a peripheral storage device.

Forms : standard HTML elements which offer tools for a user to provide information through textboxes, checkboxes, radio buttons, selection lists and buttons.

FORTH: a microcomputer programming language from the early seventies, considered useful for process and device control applications.

FORTRAN: (FORmula TRANslator): a computer language which was originally designed in the 1950's for scientific and mathematical use. Modern versions are available for the Mac and PC.

Fourfold degenerative site: a codon position where a change of a nucleotide to any of the three possible nucleotides has no effect on the amino acid coded for.

Four-tone record : a data structure describing the tones produced by a four-tone synthesizer.

Four-tone synthesizer : the part of the Macintosh Sound Driver used to make simple harmonic tones, with up to four "voices" producing sound simultaneously.

FPU (Floating Point Processor Unit): chip that speeds calculation of floating point (non-integer) mathematics. Was available as an option on older Macintoshes and PCs.

Fragmentation: Non-contiguous data in RAM or on a hard or floppy disk. Pieces of a file may be stored on many parts of a disk, increasing the total access time in reading or writing the file.

Frame grabber: external hardware or plug-in expansion board that connects a video source to the PC or Macintosh; with appropriate software, permits capture of a video frame (still TV picture).

Frames : an extension to HTML developed by Netscape that allows a Web browser to be divided into discrete rectangular spaces, each of which contains separate files. Links in one frame can target the resulting file to another frame.

Freeware: free software written by users or hobbyists, and occasionally by commercial providers to entice you to purchase a full version of their applications software.

Freeze: condition in which computer in unresponsive to mouse clicks or keyboard commands.

FTP: File Transfer Protocol -- older standard for finding and transferring files on the internet. Most FTP have now been incorporated or linked into either gopher or WWW sites (or both). Most public sites allow log-on using "anonymous" as an id and an e-mail address as a password.

Full-duplex: this refers to the ability of a communications system to send and receive information at the same time.

Function : in a programming language, an instruction that converts data from one form to another; a preprogrammed calculation that can be carried out on request from any point in a program. The CHR and CHR$ functions, for example, convert an ASCII code number into its corresponding character. Because a function takes in one or more arguments and returns a single value, it can be embedded in an expression.

Function call: a request by a program to execute a particular subroutine as needed.

Function keys: fifteen keys along top of Apple Extended Keyboard, or the standard 101 key (or mor e advanced) PC keyboard.

Functional genomics: systematic analysis of gene activity in healthy and diseased tissues.

Gap penalty: a reduction in the score assigned for an alignment that is applied to minimize the introduction of gaps.

Gaps: a dash or series of dashes introduced in an alignment to indicate the occurrence of an insertion/deletion event in one of two aligned sequences since they last shared a common ancestor.

Garbage: A string of meaningless characters that bears no resemblance to a document. It is an indication that the computer and peripheral device are using different transmission rates or data formats. GB: See gigabyte.

Gateway: hardware or software that acts as a bridge between two applications or networks so that data can be transferred among a number of computers.

GC content: measure of the abundance of G and C nucleotides relative to A and T nucleotides within a DNA sequence.

GCG Assembly: a tool using the GCG Fragment Assembly System created by Genetics Computer Group, Inc. It is used to assemble nucleotide sequence fragments contained in a cluster and view how they overlap with each other.

GenBank: the public DNA sequence database maintained by the National Center for Biotechnology Information (NCBI), part of the National Library of Medicine.

Gene: a specific DNA sequence which carries the information required for constructing proteins. The human genome is estimated to contain 30,000 genes.

Genome: the sum total of an organism's genetic material. cf "proteome"; the total genetic information possessed by an individual organism. Each cell contains a complete copy of the genome.

Genomics: sequencing and characterization of the genome and analysis of the relationship between gene activity and cell function.

Genotype: the unique genetic makeup of an individual organism.

Get Info Window: on the Macintosh, a window appearing in response to Get Info command on File menu (or control-I keyboard command) run while in the Finder. Provides information about size in kilobytes of a selected file, folder or disk where residing, creation date, and possibly additional comments.

GI: GenBank Identifier, a unique number assigned to protein and nucleotide sequences in the GenBank database.

GIF: graphics interchange format, a data compression format used originally by CompuServe; commonly used for transferring pictures on the Internet; now largely replaced by jpg.

Gigabyte (GB): A unit of measurement equal to 1,024 (210) megabytes. Compare kilobyte, megabyte.

GIGO: (Garbage In, Garbage Out): This expresses the concept that unreliable input data produce an unreliable output.

Global alignment: a sequence alignment method that provides a score for aligning two sequences in their entirety.

Global backup: The process of backing up all the files on a hard disk.

Global coordinate system: The coordinate system based on the upper-left corner of the bit image being at (0,0).

global symbol: A label in a code segment that is either the name of the segment or an entry point to it. Global symbols may be referenced by other segments.

Global variable: a variable that can be accessed from anywhere within a program, and maintains its value while the program moves from one code segment to another. Global variables are defined within code by the 'Public' keyword.

GNOME: a type of GUI developed for LINUX users. See the GNOME homepage.

Gopher: early Internet computer connection, used to link an internet account to another computer, in order to access their public files, sometimes via hidden telnet or ftp.

GrafPort record: A data record used by QuickDraw to establish a graphics port. graph: A pictorial representation of data.

GrafPort: (1) The data type for a graphics port. (2) A shorthand way of referring to a graphics port.

Graphics mode: A way of displaying text and graphics on the screen. In graphics mode, images are formed by patterns of dots.

Graphics port: A complete drawing environment in QuickDraw (data type GrafPort), including such elements as a bitmap, a character font, patterns for drawing and erasing, and other graphics characteristics. Sometimes called a GrafPort.

Graphics: (1) Information presented in the form of pictures or images. (2) The display of pictures or images on a computer's display screen.

Grayscale: Capability for displaying varying intensities of gray at each pixel location. Standard Macintosh grayscale monitors can show 256 levels, from black to white; since the eye can distinguish only about 40 different levels of gray, this permits photorealistic images to be displayed.

Grow box: Lower right corner of a window which allows you to resize a window by clicking and dragging the mouse; resizing then occurs from the lower right corner of the window.

Grow region: A window region, usually within the content region, where dragging changes the size of an active window.

GU-AG rule: in eukaryotic protein-encoding genes, the first two nucleotides at the 5’ end of the RNA sequence are 5’-GU-3’ while the last two at the 3’ end are 5’-AG-3’.

GUI (graphical user interface): Interactions between a user and the computer in which commands are executed by clicking and pointinmg with a mouse, rather than by typing commands. Files and directories appear as icons. The Finder of the Macintosh operating system is a GUI, while Windows for PC machines is a 'layer' program used with an existing operating system software like OS/2 or MS-DOS.

Hacker: originally meaning an excellent programmer, it now usually means someone who specializes in breaking into computer systems, esp. via the internet.

Hairpin turn: in an RNA chain, where the chain reverses direction to permit base pairing between regions of the same nucleotide chain.

Half-duplex: A communications link that can send or receive data but cannot do both at the same time.

Handle: A pointer to a master pointer, which designates a relocatable block in the heap by double indirection. See also memory handle.

Handler: HyperTalk script code that responds to a message from another object.

Handles: graphic shapes when selected in graphics applications, are surrounded by a bounding rectangle with small squares at the corners and midlines (typically 8 in all) that can be dragged to reshape or resize the image.

Hang: To cease operation because either an expected condition is not satisfied or an infinite loop is occurring. A computer that's hanging is called a hung system.

Hard copy: A computer output that is printed on paper or some other permanent medium that can be read with the naked eye.

Hard disk: A random access mass storage device that consists of a continuously rotating circular metal plate. It is accessed by a read/write head that sends and retrieves information.

Hardware: All the tangible physical components of the computer and its peripheral devices.

Hash: a Perl variable storing multiple values of any type (numeric, string).

Head: The part of a magnetic storage unit that reads and writes information on the magnetic media.

Header file: A file whose contents will be included with the source file at compile time— it contains function declarations, macros, types, and defines used by the compiler. Also called include file.

Heap zone: An area of memory initialized by the Memory Manager for heap allocation. HFS: See hierarchical file system.

Heap: The area of memory in which space is dynamically allocated and released on demand, using the Memory Manager.

Help menu: Menu at the right of the menubar; providing "Balloon Help." Different applications software packages may provide additional Help menu items.

Hexadecimal system: The representation of numbers in the base-16 system, using the ten digits O through 9 and the six letters A through F. For example, the decimal numbers 0, 1, 2, 3, 4, . . . 8, 9, 10, 11, . . . 15, 16, 17 would be shown in hexadecimal notation as 00, 01, 02, 03, 04, . . . 08, 09, OA, OB, . . . OF, 10, 11. Hexadecimal numbers are easier for people to read and understand than are binary numbers, and they can be converted easily and directly to binary form. Each hexadecimal digit corresponds to a sequence of four binary digits, or bits. Hexadecimal numbers are usually preceded by a dollar sign ($). Compare binary system, decimal system.

HFS: Heirarchical File System, a multilevel grouping of applications software, documents and folders which can be nested (contained within) other folders. Analogous to DOS directory/subdirectory scheme.

Hierarchical file system (HFS): A feature of system software that lets you use folders to organize documents, applications, and other folders on a disk. Folders (analogous to subdirectories) can be nested in other folders to create as many levels as you need. In a hierarchical file system, a file is specified by its pathname rather than by a single filename.

Hierarchical menu: A menu in which one or more individual menu items can themselves contain a submenu.

High ASCII characters: ASCII characters with decimal values of 128 to 255. Called high ASCII because their high bit (first binary digit) is set to 1 (for on) rather than O (for off). Compare low ASCII characters.

High-level language: A computer programming language that is independent of the processor. A program written in a high-level language must be translated before it can be executed. Examples include BASIC, COBOL, FORTRAN and Pascal.

Highlight: To make something visually distinct. For example, when you select a block of text in a word processor, the selected text is highlighted—it appears as light letters on a dark background rather than dark letters on a light background. Highlighting is accomplished by inverting the display.

High-order byte: The more significant half of a memory address or other two-byte quantity. In the 68000 microprocessors used in the Macintosh family, the high-order byte is stored first. Compare low-order byte.

High-order: (adj.) Describes the most significant part of a numerical quantity. In normal representation, the high-order bit of a binary value is in the leftmost position; likewise, the high-order byte of a binary word or longword quantity consists of the leftmost eight bits. Compare low-order.

Hit: a request made to a Web server. Many people think the term refers to the number of visits a web page gets, however, if a web page has 5 images on it, when the page is loaded, 6 "hits" will be recorded. One for the HTML of the web page and 5 for the images.

hnRNA: heterogeneous RNA from primary RNA polymerase II transcripts; these are converted to mRNAs following capping, splicing and polyadenylation.

Home Page: the starting point, or main page of a web site. This page usually has some sort of table of contents on it and describes the purpose of the site. Many people have a "personal home page," which is often the only page of their web site.

Home stack: Default stack file that is opened when HyperCard is opened. Contains preferences settings.

Hotlink: a connection between programs that allows changes in data in one program while the computer automatically changes the same information in the programs linked to it. For example, Word and Excel can have hotlinks so information is updated.

HotSpot: The part of a pointer (such as the arrow pointer) that's aligned with the actual mouse location.

Housekeeping gene: a gene expressed at high levels in all tissues and at all times during development.

HSPs: High-scoring Segment Pairs; two sequence fragments of arbitrary but equal length with an alignment that is locally maximal and for which the alignment score meets or exceeds a threshold (cutoff) score.

HSSP: database of homology-derived structures of proteins

HTML: Hypertext Markup Language, a series of tags included in text files that define the structure of a Web document and its links to other documents. Web browsers interpret these tags to determine how to display a Web page.

http: "HyperText Transfer Protocol." It is the protocol used to transfer data over the World Wide Web. All web site addresses being with "http://". Whenever you type aN URL into your browser, your computer sends an HTTP request to a Web server. The Web server then sends to you the requested HTML page.

Hub: device that is used to network multiple computers together.A central connection for all the computers in a network, which is usually Ethernet-based. Information sent to the hub can flow to any other computer on the network.

Human Interface Guidelines: A set of software development guidelines designed by Apple Computer to support the desktop concept and to promote uniform user interfaces in Apple II and Macintosh applications. See also desktop.

HyperCard: Programming environment (language, editor, etc.)for writing simple graphics-based applications programs. Uses HyperTalk, an English-like 'scripting' language. Now almost obsolete.

Hyperlink: an icon, picture or word in a file that, when clicked on with the mouse, automatically opens up another file for viewing. Hyperlinks contain hidden code including the address or file names to which they point.

I/O: The abbreviation for input/output.

I-beam: A type of pointer shaped like the capital letter "I" and used in entering and editing text.

ICGEB: International Center for Genetic Engineering and Biotechnology, Trieste

Icon list: A resource (type ICN# ') consisting of a list of icons.

Icon number: A digit from 1 to 255 to which the Menu Manager adds 256 to get the resource ID of an icon associated with a menu item.

Icon: An image that graphically represents an object, a concept, or a message. Icons on the outside of the computer can be used to show where to plug in cables, such as the disk drive icon on the back panel that marks the disk drive connector. Screen icons in mouse-based applications represent disks, documents, application programs, or other things that can be selected and opened. A screen icon is a 32by-32-bit image.

IDE (Integrated Development Environment): in VB, the collection of software tools used to create VP programs, such as the Form Layout Window and the Object Browser.

ImageWriter: Dot matrix impact printer marketed by Apple with earlier generation Macintoshes. Now largely superseded by inkject printers (like Epsons and HPs) and laser printers.

Inactive window: Window not currently selected and active, usually covered partly by another window on the screen.

INCBI: Irish National Centre for BioInformatics

Include file: A file whose contents will be included with the source file at import time—it contains constants and types. Also called a header file.

Increment: In programming, to increase the value of a variable used as a counter. Compare decrement.

Indel: an insertion or deletion event in a sequence.

Index: the subscript number that identifies as single element in a data array (or a VB control array).

Inheritance: the act of passing property values from a class to all objects created in that class (in VB, C++, etc.).

Initialize: prepare a floppy disk for use on a computer by formatting the recording tracks, block and sector addresses, directory, etc.

Initiation complex: a set of transcription factors that interact with each other and with a gene promoter region to facilitate the initiation of transcription.

Initiator sequence: essential nucleotides at the transcriptional start site of a eukaryotic gene.

Insertion point: (1) The place in a document where something will be added, represented by a blinking vertical bar. Select the insertion point by clicking the document where the changes should be made. (2) An empty selection range.

Insertion sequence: a transposable element with no information contained except what's necessary for its own transposition; when inserted in a gene, it disrupts the normal function of that gene.

Installer: Application that installs system or other software onto your hard disk. Program isn't executable until installation is complete. May involve "unstuffing" compressed software.

Instruction set: The complete range of instructions a microprocessor can interpret. Each brand of microprocessor has its own instruction set.

Instruction: A unit of a machine-language or assembly-language program corresponding to a single action for the computer's processor to perform.

Integer: A whole number in fixed-point form. Compare real number.

Integrated software: software consisting of several interlinked applications, typically word processor, spreadsheet, and presentation programs, perhaps also communications and personal organization software as well. Popular vendors include Microsoft (Office) and Corel (Suite).

Intelligent peripheral: A hardware device that is capable of some limited processing of data by itself independent of the processor to which it is connected.

Interactive mode: A method of data processing that places the user in a form of "conversational" communication with a computer and providing immediate response to user input.

Interface: The point or boundary at which independent systems communicate or interact. In a computer system, this term quite often relates to another (electrical voltage to a numerical value).

Interlacing image: when an image appears on the screen very "out of focus," clarifying as it loads (as opposed to loading clearly line by line), it is interlaced.

Internet: A global e-mail network that interconnects hundreds of thousands of university, corporate, and commercial e-mail services (and millions of computers) worldwide.

Interpreter: A language translator that reads a program instruction-by-instruction and immediately translates each instruction for the computer to carry out.

Intractable: computer problem requiring an unacceptable length of computational time for solution, i.e., insoluble because of scale.

Intrinsic function: a built-in, predefined function in a programming language Example in VB: CStr()

Intrinsic terminator: a signal for prokaryotic transcription termination.

Intron: a nucleotide sequence segment present in a primary (hnRNA) transcript but not in the mRNA.

Introns: DNA sequences in genes which have no (known) protein-coding function. Other non-coding regions include control sequences and intergenic regions whose functions are unknown.

Invariant: a position within aligned sequences in which all sequences contain the same character (representing a nucleotide or amino acid).

IP Address or **IP numbe**r: a code of nunbers separated by 4 dots that identifies a particular computer on the Internet. Every computer requires an IP address to be connected to the Internet.. If you have a standard dial-up account with an Internet Service Provider, you will either be assigned a static IP address (which is always the same), or, in most cases, you will be given a dynamic IP address, (which changes everytime you log on). If you connect through a network, it is very likely that you have a static IP address.

ISDN: Integrated Services Digital Network, a fast phone connection., about 2-8x as fast as a conventional phone line modem.

Isochores: long portions of the sequence within genomes containing a homogeneous base composition.

ISP: "Internet Service Provider." How almost all homes are connected to the Internet. Most ISPs are made up of a network of servers, including Web, e-mail, and news servers). When your modem dials your ISP, a point-to-point protocol (PPP) connection is established with another modem on the ISP's end. From there, you are connected to routers which route you to the Internet "backbone".

IT: Information Technology or Information Technician, depending on usage

Item list: A list of information about all the items in a dialog or alert box.

Item: In dialog and alert boxes, a control, icon, picture, or piece of text, each displayed inside its own display rectangle. See also menu item.

Java: a compiled, object-oriented programming language developed by Sun Microsystems; the language is similar in syntax to C++, and is used to develop distributed applications programs (applets) on the World Wide Web.

JavaScript: an interpreted, object-oriented scripting language invented by Netscape, allowing the addition of interactivity (animation, data input, graphics, choice selection) to Web pages. A simplified Java-like language.

Jaz drive: a large removable data storage format (1 or 2 gigabyte cartridges).

JPEG: "Joint Photographic Experts Group," a JPEG is a compressed graphic file format. JPEG compression is more efficient in compressing graphics of photographic color depth than GIF compression is. So, with high-color images JPEG files take up less space and have better color accuracy. JPEGs are cross-platform: the same file can be viewed equally on a Mac or PC.

Juke box: a device which allows a server (internet, intranet, or bbs) to access a large number of CDs on demand.

Junk DNA: DNA sequences for which no function is known.

Justification: The horizontal placement of lines of text relative to the edges of the rectangle in which the text is drawn.

KDE: a type of GUI developed for LINUX users. See Kermit. An older, slow, but very reliable method of downloading files.

Kernel: operating systems (OSs) are built in "layers". Each layer has different functions such as serial port access, disk access, and the graphical user interface (GUI) itself. The base layer, or the foundation of the operating system, is called a kernel. The kernel provides low-level services, such as the hardware-software interaction, memory management, etc.

Keyboard equivalent: The combination of a modifier key—usually the command key—and another key, used to invoke a menu item from the keyboard. Also called a command-key equivalent. See also keyboard shortcut.

Keyboard shortcut: A keystroke that can be used instead of a mouse action to perform a task. For example, pressing the command and the X keys at the same time is the same as choosing the Cut command from the Edit menu.

Keyboard: A peripheral input device much like a typewriter keyboard. For the Macintosh, the standard Apple keyboard with full alphanumeric character set, cursor keys and numeric pad, or the Extended Keyboard, which adds about 20 function and special purpose keys.

Keyword: a reserved word representing a function, command or constant in a language like VB. These words can't be used as user-defined variables or constants because they cause a 'name collision' or conflict.

Kilobyte (K, KB): A unit of measurement consisting of 1,024 (210) bytes. Thus, 64K memory equals 65,536 bytes. The abbreviation K can also stand for the number 1024, in which case KB is used for kilobyte. See also gigabyte, megabyte.

Label menu: In System 7, allows assignment of seven names and colors to disks, folders and icons on the Desktop. Useful for sorting and searching as an attribute of files.

LAN: see local area network

Landscape: “normal" paper orientation is "portrait", higher than it is wide. "Landscape" is wider than it is high.

Language: See Programming language, High-level language, and assembly language.

LaserWriter: Apple laser printer, 300 dpi or 600 dpi resolution, usually capable of PostScript language interpretation.

Least significant bit: The binary digit in a number or data byte that contributes the smallest quantity to the value of the number; usually written at the right end of the number. Compare most significant bit.

Length penalty: used in sequence alignment algorithms to penalize the introduction of long gaps.

Library: A collection of expressed genes from a specific tissue sample, and their annotations.

Light pen: A stylus that is capable of sensing light on a video display or of determining the shape of a character for text input to a computer.

Line printer: A type of printer that prints a whole line at a time.

Linux: an operating system similar to Unix, created by Linus Torvalds. His freely distributed OS is widely used and customizable: you can actually add your own source code to the OS itself. It is an inexpensive substitute for Unix. The current supported hardware platforms are Intel, PowerPC, DEC Alpha, Sun Sparc, and Motorola.

LINUX: Linux Central ;Frank Kasper & Associates ; Macmillan Digital ; Caldera Systems ; SuSE Linux; Red Hat .

List Manager: The part of the Operating System that provides routines for creating, displaying, and manipulating lists.

List record: The internal representation of a list, where the List Manager stores all the information it requires for its operations on that list.

Listproc: a mail distribution program, similar to listserv.

Listserv: a generic term for mail discussion groups and a specific e-mail discussion list program.

Load: The process of entering programs or data into random access memory.

Local alignment: a sequence alignment algorithm that searches for subregions that align well.

Local area network (LAN): A computer system that consists of several microcomputers connected to a single transmission cable. This network allows for information to be shared among all users on the system while maintaining autonomy and low costs.

Local coordinate system: The coordinate system local to a GrafPort, imposed by the boundary rectangle defined in its bitmap.

Local variable: a variable defined and used only within a specific procedure or code segment of an application program. Other procedures can't 'see' local variables.

Localization sequence: a string of amino acids that cause a eukaryotic protein to be delivered specifically somewhere within the cell, e.g., to the nucleus, peroxisome, mitochondria, etc.

Logical end-of-file: The position of one byte past the last byte in a file; equal to the actual number of bytes in the file. Compare physical end-of-file.

Logical operator: An operator, such as AND, that combines logical values to produce a logical result, such as true or false; sometimes called a Boolean operator. Compare arithmetic operator, relational operator.

LOGO: a high level programming language with useful graphics capabilities, invented by Seymore Papert in the 1960's, particularly appropriate for introducing computers to children. Also known as Turtle Graphics.

Loop: A section of a program that is executed repeatedly until a limit or condition is met, such as an index variable's reaching a specified ending value.

Low ASCII characters: Characters with decimal equivalents between 0 and 127, inclusive. Called low ASCII because the high bit (leftmost binary digit) is set to 0 rather than 1. The low ASCII characters make up the standard ASCII character set. Compare high ASCII characters.

Low-order byte: The less significant half of a memory address or other two-byte quantity. Compare high-order byte.

Low-order: (adj.) Describes the least significant part of a numerical quantity. In normal representation, the low-order bit of a binary number is in the rightmost position; likewise, the low-order byte of a binary word or longword quantity consists of the rightmost eight bits. Compare high-order.

LPM: An abbreviation for lines per minute; used to describe the output speed of a printer.

Machine language: A set of instructions that are coded and can be read and used directly by the computer without further processing or translation. See also Assembly language.

MacInTalk: A system extension that converts text or phonemes into computer-sounding voice played over the Macintosh loudspeaker.

Macintosh User Interface: The standard conventions for interacting with Macintosh computers. The interface ensures users a consistent means of interacting with all Macintosh computers and the applications designed to run on them.

MacPaint document: A document created by the Macintosh MacPaint application, or any application that creates MacPaint-compatible graphics.

MacPaint file format: Image format (PNTG) for bitmapped graphics images.

Macro: (1) A user-defined command that tells an application to carry out a series of commands when the macro is typed. (2) A recorded sequence of characters and commands, identified by a name and possibly triggered by a keystroke. See also script. (3) A single keystroke or command that a program replaces with several keystrokes or commands.

Main event loop: In a standard Macintosh application program, a loop that repeatedly calls the Toolbox Event Manager to get events and then responds to them as appropriate.

Main: The name of the function that is the entry point for every C program.

Mainframe: A large commercial computer. Mainframes are distinguished from microcomputers and minicomputers by relative price, size, computing power, and number of users simultaneously supported.

Manager: A set of data structures and routines that perform a set of related Toolbox or Operating System functions. For instance, the Window Manager handles the display and manipulation of windows on the screen.

Mark: The current position in an open file. It is the point in the file at which the next read or write operation will occur.

Mass storage device: A large capacity peripheral hardware device that is used for information storage. See also Digital cassette drive and Disk drive.

Master pointer: A single pointer to a relocatable block, maintained by the Memory Manager and updated whenever the block is moved, purged, or reallocated. Each allocated memory block has a master pointer, but the block is normally accessed through its memory handle (which points to the master pointer), rather than through the master pointer itself.

Match score: the credit given by an algorithm to an alignment for each aligned pair of identical residues.

MB: see megabyte.

Mega: A prefix for an order of magnitude that is 2^{20} or approximately I million; most often used to describe memory capacity.

Megabyte (MB): A unit of measurement equal to 1024 kilobytes, or 1,048,576 bytes. See also gigabyte, kilobyte.

Memory handle: The identifying number of a particular block of memory. It is a pointer to the master pointer to the memory block. A handle rather than a simple pointer is needed to reference a movable memory block.

Memory Manager: The part of the Macintosh Operating System that dynamically allocates and releases memory space in the heap.

Memory: A hardware component of a computer system that can store information for later retrieval. See also random-access memory, read-only memory.

Menu bar: The horizontal strip at the top of the screen that contains menu titles.

Menu item: A choice in a menu, usually a command to the current application. See also item.

Menu Manager: The part of the Toolbox that deals with setting up menus and letting the user choose from them.

Menu record: The internal representation of a menu, where the Menu Manager stores all the information it needs for its operations on that menu.

Menu title: A word, phrase, or icon in the menu bar that designates one menu. Pressing on the menu title causes the title to be highlighted and its menu to appear below it.

Menu, heirarchical: Pull down menu in which an item has a right-pointing arrow that leads to a submenu for that item.

Menu, pop up: Menu style letting you choose from a preset list of choices to fill in a preferences setting. Pop-up menus appear when clicking on a drop-shadow box.

Menu, pull down: Menu of commands accessed by clicking on a menu title in the menubar. The menu drops down, allowing the mouse to be dragged to the desired command. Depressing the mouse button keeps the menu extended. Dragging down the menu highlights each command in turn. Releasing the mouse button on the command activates that command.

Menu: A list of choices presented by a program, from which the user can select an action. In the desktop interface, menus appear when the user points to and presses menu titles in the menu bar. Dragging through the menu and releasing the mouse button while a command is highlighted chooses that command.

Method: a procedure, associated with an object class, that manipulates an object.

MHz (megahertz): A measure of frequency, in millions of cycles per second. Standard speeds of different Macintosh models includes 8, 16, 25, 33 and 40 MHz. Used to rate the speed of a CPU chip (the early Macs used 68000 CPUs at 8 MHz, the newest, most expensive 68040 chips run at 40 MHz.)

Microprocessor: A large-scale integrated circuit that performs all the operations in most modern computer systems.

Microsatellite: a genomic region where very short sequences of nucleotides like 5'CA-3' are repeated many times to a variable extent from individual to individual.

MIDI: Musical Instrument Digital Interface; the connection between a musical instrument (usually a keyboard) and a computer; or, the music data file resulting from such a connection.

MIME: Multipurpose Internet Mail Extensions -- encoding that allows e-mail programs to show non-ASCII information.

Minisatellite: as with microsatellites, where the repeated nucleotide sequences occurring multiple times are from 5 to 20 or 30 base pairs.

MIPS: million instructions per second, a rough measure of processor power in workstations.

Mirror: some internet sites are so popular that mirror sites are set up with identical information. If there is a mirror site closer to you than the one you're accessing, the odds are downloads will be faster. You can also check mirror sites to see if they are less busy than the primary site.

Mismatch score: penalty points assigned by an alignment algorithm when nonidentical residues are aligned.

Modem: A contraction of modulator and demodulator. This device permits computer-to-computer communications over the telephone network. Information is transmitted by altering the frequency of a tone. The lowest frequency of the tone is the baud rate of the communications device and specifies the maximum rate of data transfer.

Modifier key: A general term for a key that generates no keyboard events of its own but changes the meaning of other keys or mouse actions; for example, caps lock, esc, command, control, option, and shift. When a modifier key is held down while another key is pressed, the combination makes that other key behave differently. Sometimes called a control key. Compare character key.

Modules: parts of a computer program that are separate and discrete, yet interconnected.

Molecular clock: the hypothesis that mutations accumulate in given DNA sequences at an (approximately) constant rate in evolution..

Monitor: See Video display terminal.

MOO: MUD, Object Oriented -- see MUD. A "social MOO" is a chat area where everyone is in disguise.

Morphing: an animation technique that seamlessly transforms one image into any other image (e.g. a cat into a mouse); widely used in movies (e.g. Terminator II) and commercials. Word derived from “metamorphosis”)

Mosaic: the first graphical browser for the world wide web, now replaced by Netscape (both were developed by NCSA, the National Center for Supercomputing Applications). Now replaced by Explorer and Netscape Navigator.

Most significant bit: The binary digit in a number or data byte that contributes the largest quantity to the value of the number; usually written at the left end of the number. For example, in the binary number 10110 (decimal value 22), the leftmost bit has the decimal value 16 (24). Compare least significant bit.

Motherboard: main circuit board in a microcomputer or other electronic device. The microcomputer motherboard contains the CPU, memory, etc.

Mount: To install a file system onto the directory hierarchy. Compare unmount.

Mounted volume: A volume that has been inserted into a disk drive and has had descriptive information read from it by the File Manager. Compare unmounted volume.

Mouse button: The button on the top of the mouse. In general, pressing the mouse button initiates some action on whatever is under the pointer, and releasing the button confirms the action.

Mouse event: An event generated when the user presses and releases the mouse button. A mouse-down event is generated when the user presses the mouse button. A mouse-up event is generated when the user releases the mouse button.

Mouse: A small device the user moves around on a flat surface next to the computer. The mouse controls a pointer on the screen whose movements correspond to those of the mouse. The pointer is used to select operations, to move data, and to draw within graphics programs.

Mouse-based application: An application that accepts input from a mouse, as compared with a keyboard-based application.

mov: video file formate extension, can be played by MoviePlayer or related programs.

Movable: A memory block attribute, indicating that the Memory Manager is free to move the block. Opposite of fixed. Only positionindependent program segments may be in movable memory blocks. A block is made movable or fixed through Memory Manager calls.

Move: To change the location of a memory block. The Memory Manager may move blocks to consolidate memory space.

MPEG: "Moving Picture Experts Group." Also refers to an actual type of multimedia file, typically ending with ".mpg," compressed movies that can contain both audio and video. Images maintain a high amount of quality from the original, uncompressed movie. Widely used on the web.

MultiFinder: A first-generation multitasking operating system for Macintosh computers that makes it possible to have several applications open at the same time, including background applications that let the user perform one task while the computer performs another.

Multiple sequence alignment: alignment of three or more homologous sequences.

Multiprocessor: Use of multiple processors or computers to handle the processing of a task. One processor always acts as the master and sends instructions to each of the slave processors.

Multitasking: The process of executing more that one software package at a time--for example, through the use of an integrated software package. This software configuration allows more than one task to be performed apparently at the same time; however, the computer performs each task serially.

MUMPS: (Massachusetts General Hospital Utility Programming System): A high-level computer language designed to be physician-friendly. It is being widely used for commercial applications on minicomputers, especially for medical applications.

Nanosecond (ns): one billionth of a second, used to rate RAM memory chip refresh rates. Faster Macintoshes require faster (lower numbered) RAM chips, e.g. 70 ns.

Native code: binary (or object) code that can be executed by a computer's processor. In VB, native code is generated when a program is compiled.

Native structure: the unique folded structure of a particular protein as it is found naturally in the cell.

Navagator: Internet browser software, Netscape Navigator (a Sun Computer-based software creation)..

NCBI: National Center for Biotechnology Information, Washington, D.C., USA.

Nearest neighbor energy rules: employed in computing the energy of a molecular structure by considering only the interactions between each residue and its adjacent neighbors, to predict the conformation of a molecule; this approximation greatly reduces computation time required to predict structure..

Nested loop: A loop contained within the body of another loop and executed repeatedly during each pass through the outer loop. See also loop.

Nested subroutine call: A call to a subroutine from within the body of another subroutine.

Netiquette: proper behavior on the Internet.

Netscape: one of the two most popular of the Web browsers Netscape Navigator, with Microsoft's Internet Explorer being the other.

Network: See Local area network.

Nibble: 1/2 of a byte of memory – 4 bits, or upper or lower half of an 8 bit byte.

NIL: Pointing to a value of 0. A memory handle is NIL if the address it points to is filled with zeros. Handles to purged memory blocks are NIL.

Node: a computer hooked into the internet or local area network, one with its own IP address.

Nonbreaking space: The character with ASCII code $CA; drawn as a space the same width as a digit but interpreted as a nonblank character for the purposes of word wrap and selection.

Nonsynonymous substitution: any base substitution that alters a codon to one specifying a different amino acid.

Normalized library: a cDNA library from which most of the highly expressed sequences have been removed in order to represent a greater proportion of low-abundance messenger RNAs. Normalized libraries are not an accurate reflection of a tissue's gene-expression profile.

Northern (Electronic): a feature of the LifeSeq and ZooSeq gene sequence and expression databases, this analysis reveals the presence and quantity of an expressed gene among the libraries. It is based on the Northern Blot laboratory technique.

NOT: A unary logical operator that produces a true result if its operand is false, and a false result if its operand is true. Compare AND, exclusive OR, OR.

NuBus: One type of expansion slot and expansion board design in Macintosh II computer family.

Nudge: to move a cursor or object with an arrow key instead of the mouse (taking longer over a "distance" but having more precise placement).

NUL: Refers to ASCII character $00; not to be confused with zero, which is ASCII character $30.

Null event: An event reported when there are no other events to report.

Null: (1) An undefined value. Null is different from 0; 0 is a value just like other numbers, whereas null means no value at all (of the expected type). A null string does not contain anything. For example, " is not a null string because it contains a space character; " represents a null string. (2) Any character or character code that has no meaning to the operating system or program interpreting it. (3) A type of attention cycle.

Object Browser: a part of VB's IDE; this allows you to examine all the objects (with the properties, methods and events of each object) available in an application program being created. (Access by using the F2 key or selecting Object Browser from the View menu.

Object code: A sequence of instructions (program) in binary form, resulting from either the output of an assembly language program or a compiled high-level language that is able to be executed immediately by the processor without further translation.

Object program: The translated form of a program produced by a language translator such as a compiler or assembler. Also called object code. Compare source program.

Object: a combination of code and data (in VB, something like a ListBox) that can be manipulated. Objects contain properties and methods, and are defined by a class.

Object-oriented graphics: a picture or other graphic document where each object, rather than being made up of separate pixels (as in bit-mapped graphics) is treated as a unit represented by mathematical equations for various ciurves and shapes, as they are in the Macintosh MacDraw applications program.

Object-oriented programming: a language that links data to the processes that manipulate it. Java, Stella and Lingo are all OOP languages.

OCR (Optical Character Recognition): Converts printed text into editable text characters in a document file. Requires scanner hardware, OCR software.

Off line: A temporary state of operation for a peripheral device in which it is not under direct control of the central processing unit (CPU). The device can perform operations without affecting the CPU. Likewise, information cannot be sent to or received from the device in this state.

On line processing: See Interactive mode.

On line: The state of operation for a peripheral device in which it is under the direct control of the central processing unit. This is the exact opposite of off line.

On-line Service: companies that provide e-mail, discussion forums (or sigs), conferencing, and file access.

OOP (Object-Oriented Programming): a programming language utilizing software modules called 'objects', which package data and how those data are to be processed.

Open file: A file with an access path. Open files can be read from and written to.

Open reading frame: a nucleotide sequence containing a string of codons uninterrupted by the appearance of a stop codon within that reading frame.

Open: To make available. Files and documents are opened in order to work with them. A file may not be read from or written to until it is open. In the desktop interface, opening an icon causes a window with the contents of that icon to come into view. Actions may be performed in the window when it's active.

OpenGL: Open Graphics Library, a 3D graphics language developed by Silicon Graphics. the same on any operating system and any hardware that supports OpenGL, making it easier for developers of 3D games and programs to port their software to multiple platforms. Each command executes a drawing action or creates a special effect. Using hundreds or thousands of these OpenGL commands, programmers can create 3D worlds which can include texture mapping, transparency, hidden surface removal, antialiasing, and lighting effects..

Operating system: A software package that is usually provided by the computer manufacturer; designed to control the basic input/output operations of the computer. The operating system handles tasks such as loading and running programs, storing data, and multiprocessing.

Operator sequence: sequence of nucleotides associated with the promoter of a gene: prokaryotic regulatory proteins bind here.

Operator: (1) A symbol or sequence of characters, such as + or AND, specifying an operation to be performed on one or more values (the operands) to produce a result. (2) In object module format, an operation code that specifies an arithmetic or logical operation in an expression to be performed on one or two variables that precede it. The variables acted on by an operator are identified by operand opcodes that precede them. See also arithmetic operator, binary operator, Boolean operator, relational operator, unary operator.

Operon: a group of linked genes producing a single mRNA molecule in transcription : consists of structural genes and regulating elements.

Optical disk: High capacity disk storage using laser and metal-coated disk to read and write ("burn" information onto disk surface.

Option key: A modifier key that gives a different meaning or action to another key that is pressed or to a mouse action that is performed. For example, use it to type foreign characters or special symbols contained in the optional character set.

Option: (1) Something chosen or available as a choice; for instance, one of several checkbox or radio button options. (2) An argument whose provision is optional.

OR: A logical operator that produces a true result if either or both of its operands are true, and a false result if both of its operands are false. Compare AND, exclusive OR, NOT.

OS: see Operating System. The software that runs your computer (like Windows).

OS2/Warp: IBM's multi-tasking operating system (cf UNIX, Windows).

Package Manager: The part of the Toolbox that lets you access Macintosh RAM-based packages.

Package: A set of routines and data types that forms a part of the Toolbox or Operating System and is stored as a resource. On the original Macintosh, all packages were diskbased and brought into memory only when needed; some packages are now in ROM.

Packed: (adj.) Describes the condition of a space in memory, allocated to page rectangle: The rectangle marking the boundaries of a printed page image. The boundary rectangle, PortRect, and ClipRgn of the printing GrafPort are set to this rectangle.

Paint program: Application software allowing graphic image creation, by setting individual pixels to white or black.

Parallel interface (data transmission)**:** A method of transmitting data in which all 8 bits of a byte are transmitted simultaneously. An 8-bit parallel interface must have at least eight electrical lines.

Parity: A software method used to determine whether hardware has correctly sent and received the appropriate information. This is performed by adding an additional bit to the end of a character's ASCII code in order to make the sum of all "1" bits consistently even (even parity) or odd (odd parity).

Parse: to use string functions to separate user input information into smaller strings like individual words or data values.

Pascal: A high-level programming language with statements that resemble English phrases. Pascal was designed to teach programming as a systematic approach to problem solving. Named for the philosopher and mathematician Blaise Pascal.

Pass: A single execution of a loop.

Password: (1) A secret word that gives a user, but no one else, access to data or to messages sent to the user through an information service. (2) A unique word or set of characters that must be entered before a registered user at a workstation can access a volume on a server.

Paste: To place the contents of the Clipboard— whatever was last cut or copied—at the insertion point, by choosing Paste command from the Edit menu, or using the keyboard command control-V.

Pathname: The complete name of a document beginning with the name of the disk (also called the volume name), the name of the subdirectory it is in (if it is in one), and the name of the document. The pathname begins with a slash, and the parts of the pathname are separated by slashes. It is called a pathname because it describes the route to the document. Compare filename.

PC board: A printed circuit board within any electronic device.

PC: abbreviation for Personal Computer (usually meaning an IBM or clone microcomputer, including models PC-AT, Pentium, etc., using one of the Intel 80x86 chips (80286, 80386, 80486, 80586, Pentium Pro).

PCI: Peripheral Component Interconnect." It is a local PC bus designed by Intel, and used in both IBM-compatible and Apple computers. Most add-on cards such as a video accelerator or SCSI cards use a PCI connection, requiring an open PCI slot.

PCMCIA: "Personal Computer Memory Card International Association." It can also mean, perhaps PCMCIA standards were originally designed for adding memory to portable computers, they been expanded to include numerous other devices. There are three types of PCMCIA cards and slots, all rectangular and measure 8.56 by 5.4 cm., but have different widths. The cards can be removed or inserted "on the fly": you don't have to turn your computer off to exchange them.

pdf: Portable Document File, a document which, with the proper acrobat reader, is displayed the same way on all systems. Many cd's of documents, and many documents and forms on government internet sites, are in pdf format.

Peripheral hardware device: A piece of hardware that is physically separated from the central processing unit and connected via a transmission cable. Examples of a peripheral include printers, disk drives, and video displays.

Perl interpreter: computer software that interprets and executes Perl code.

Perl script: text files consisting of a list of Perl commands.

Phrap: developed by Phil Green at the University of Washington, "Phil's Revised Assembly Program" is a tool for assembling shotgun-sequenced DNA fragments.

Physical end-of-file: The position of one byte past the last allocation block of a file; equal to one more than the maximum number of bytes the file can contain. Compare logical end-offile.

Physical size: The actual number of bytes a memory block occupies within its heap zone.

PICT: A graphic file format for the Macintosh. Newer format, PICT2, is an enhanced format capable of encoding color information.

Picture comments: Data stored in the definition of a picture that does not affect the picture's appearance but may be used to provide additional information about the picture when it is played back.

Picture frame: A rectangle, defined as part of a picture, that surrounds the picture and gives a frame of reference for scaling when the picture is played back.

Picture: An imported MacPaint document or part of a MacPaint document. (2) A saved sequence of QuickDraw drawing commands (and, optionally, picture comments) that can be played back later with a single procedure call. Also, the image resulting from these commands.

PIR: Protein Identification Resource International, a protein database vendor

Pixel map: A set of values that represents the positions and states of the set of pixels making up an image. Compare bitmap.

Pixel: Short for picture element; the smallest dot that can be drawn on the screen. Also a location in video memory that corresponds to a point on the graphics screen when the viewing window includes that location. In the Macintosh monochrome display, each pixel can be either black or white, so it can be represented by a bit; thus, the display is said to be a bitmap. For color or grayscale video, several bits in RAM may represent the image; in the Super Hi-Res display on the Apple legs, each pixel is represented by either two or four bits. Thus, the display is not a bitmap but rather a pixel map.

Plasmid: see cloning vector.

Plug-and-play: Hardware or software which in theory can be plugged in or installed and used immediately, without configuration on the part of the user.

Plug-in: an extension to existing commercial software developed by a third-party vendor. For example, Shockwave is an extension to Netscape (from Netscape Communications) developed by Macromedia to allow use of its Director files in Netscape's Navigator.

Point of call: The point in a program from which a subroutine or function is called.

Point: 1/72nd of an inch in character height, a unit of measure in typesetting, also used as a unit of measure for computer font sizes and spacings.

Pointer: A small shape on the screen that follows the movement of the mouse or shows where the next action will take place. The pointer can be an arrow, an I-beam, a crossbar, a wristwatch, and so forth.

Polyadenylation: the replacement of the 3' end of an hnRNA with a sequence of about 250 A nucleotides; these are not specified in the gene's sequence.

Polycistronic: containing a number of genes (cistrons).

Polygon: A sequence of connected lines, defined by QuickDraw line-drawing commands.

Polymerase Chain reaction (PCR): a laboratory method to synthesize large quantities of DNA: the DNA strands are separated and DNA polymerase is used to synthesize double-stranded DNA from each strand, and the process is repeated to "amplify" the DNA.

Portrait: "Portrait" paper orientation is higher than it is wide, while "landscape" is wider than it is high.

Position-specific scoring matrix: a matrix with values representing the frequencies with which a particular amino acid occupies a certain position in aligned homologous sequences.

PostScript: A page description language that uses outline definitions of font characters to produce smooth character shapes in any size and anmgle. Built into many printers.

Press: (1) To position the pointer on something on the screen and then hold down the mouse button without moving the mouse. (2) To push a key.

Print spooler: software that intercepts a print file sent to a printer and stores it in a memory or disk buffer area until the printer is ready for it, permitting computer operation before the file is finished printing. (see "PrintMonitor")

Printer: A peripheral hardware device that provides a hard-copy output of information. Types of printers available include elecrostatic, thermal, dot matrix, letter quality, ink jet, and laser.

Printing GrafPort: A special GrafPort customized for printing instead of drawing on the screen.

Printing Manager: The routines and data types that enable applications to communicate with the Printer Driver to print on a variety of printer via the same interface.

PrintMonitor: An application program that runs in the background to print documents loaded into the "PrintMonitor Documents" folder. Controls communication between Macintosh and LaserWriter while you continue to work on other documents or applications.

Private: a VB keyword indicating that variables or procedures are to be used only within the module in which they are defined (cf 'global').

Probe: a segment of labeled DNA or RNA that can specifically bind to a molecule of interest.

Procedure: a block of code that can be called from within an application. Examples include functions and subroutines.

Processor: See Central processing unit (CPU).

Program disk: A disk that contains an operating system and a self-starting application program.

Program: (n.) (1) A set of instructions describing actions for a computer to perform to accomplish some task, conforming to the rules and conventions of a particular programming language. (2) A file containing coded instructions to the computer. A compiled program is a file first created in source code and then transformed by the compiler into object code. A shell program is a text file that does not need to be compiled, because it is interpreted by the shell. (v.) To write a program.

Programming language: A defined set of characters, instructions, and commands and the rules or syntax for combining them into meaningful instructions for the computer's processor. Examples include BASIC, COBOL, and Pascal. A language is often needed to write a program or to execute a program written in a high-level language.

PROM: Programmed read-only memory; contents of these memory locations are "burned" once into the memory locations; memory contents can be read but not rewritten.

Promoter sequence: a sequence recognized by RNA polymerase as being associated with a gene.

Properties Window: a window in the VB IDE allowing viewing and modifying all of the properties of a given object during design time. The window isn't available during runtime.

Protein threading: assumed structures of a protein are used to calculate energies, and the conformation with the best "fit" is determined; also called "reverse protein folding".

Proteome: the complete profile of proteins expressed in a given tissue, cell or biological system at a given time.

Proteome: the sum total of an organism's proteins. cf "genome"

Proteomics: the systematic analysis of the protein expression of healthy and diseased tissues.

Protocol: set of guidlines that each computer follows when sending and receiving data. This set of communications rules is called a protocol. There are many different types of computers and operating systems, and just as many different types of connections: each one works with other protocols to communicate properly. Examples of different protocols are PPP, TCP/IP, SLIP, HTTP, and FTP.

Public domain software: Applications and utility software widely distributed by users' groups and BBSs. Programs are copyrighted by their authors, but are free.

Public: a VB keyword, indicating variables that can be seen by any procedure of any module in the application.

Publish/Subscribe: In Macintosh System 7, a method of sharing information between documents in the same or different applications. One document 'publishes' an edition (a separate file), another document 'subscribes' to it. Changes made by publisher are immediately updated to the subscriber document.

Pull-down menu: A menu that is hidden until the user moves the pointer to its title and presses the mouse button.

Purge: To temporarily deallocate a memory block. The Memory Manager purges a block by setting its master pointer to NIL (O). All handles to the pointer are still valid, so the block can be reconstructed quickly.

Purgeable: A memory block attribute, indicating that the Memory Manager may purge the block if it needs additional memory space. Purgeable blocks have different purge levels, or priorities for purging; these levels are set by Memory Manager calls.

Queue: A list in which entries are added at one end and removed at the other, causing entries to be removed in first-in, first-out (FIFO) order. Compare stack.

QuickDraw: The part of the Toolbox that performs all graphic operations on the Macintosh screen.

QuickTime: a technology developed by Apple Computer; the most popular multimedia format for storing sound, graphics, and movie files, (indicated as ".mov" files). Aavailable for both the Mac and the PC.

Radio buttons: a group of buttons displayed in a dialog box, only one of which can be selected at any time (cf check boxes).

RAM cache: memory set aside to hold information recently read from a disk, so that information needed can be quickly accessed by the CPU. Also called the scratchpad.

RAM disk: section of RAM reserved to act as a separate disk on the desktop.

RAM, suggested: recommended memory allocation for a program as defined by the program's author(s). Listed in the "Get Info" dialog for a program file.

Random-access memory (RAM): The part of the computer's memory that stores information temporarily while the user is working on it. A computer with 512K RAM has 512 kilobytes of memory available to the user. Information in RAM can be referred to in an arbitrary or random order, hence the term random-access. (As an analogy, a book is a random-access storage device in that it can be opened and read at any point.) RAM can contain both application programs and your own information. Information in RAM is temporary, gone forever if you switch the power off without saving it on a disk or other storage medium. An exception is the battery RAM, which stores settings such as the time and which is powered by a battery. (Technically, the read-only memory [ROM] is also random access, and what's called RAM should correctly be termed read-write memory.) Compare readonly memory.

Random-access text file: A text file that is partitioned into an unlimited number of uniform-length compartments called records. When a random-access text file is opened for the first time, its record length must be specified. No record is placed in the file until written to. Each record can be individually read from or written to—hence, random-access.

RASMOL: a program package by R. Sayle to display protein structures.

Read Me document: A plain text document that is included on application and system software disks and provides late-breaking information about the product.

Read/write Memory: Memories that can perform reading and writing operations at identical speeds.

Read: To transfer information into the computer's memory from a source outside the computer (such as a disk drive or modem) or into the computer's processor from a source external to the processor (such as the keyboard or main memory).

Reading frame: a linear sequence of codons in a gene which codes a protein, starting with the start codon and ending with a stop codon.

Read-only memory (ROM): Memory whose contents can be read but not changed; used for storing firmware. Information is placed into read-only memory once, during manufacture. It remains there permanently, even when the computer's power is turned off. Compare random-access memory.

Real number: In computer usage, a number that may include a fractional part; represented inside the computer in floating-point notation. Because a real number is of infinite precision, this representation is usually approximate. Compare integer.

Real time processing: A computer term that implies that an operation is preformed virtually simultaneously with the event generating the data or person issuing the command.

Reboot: restarting the computer after a bomb or after INIT or font files are loaded. Literally, "boot again".

Record length: The length of a random-access text file's records, in bytes. The maximum record length is 65,535 bytes in a 16-bit addressable system with all memory free; the minimum is 1 byte.

Record: (1) All the information about one person or one thing in a database. (2) A unit of storage in a random-access text file. Every random-access text file can contain a large number of records; each record holds the same number of characters. A program specifies a file's record length (in bytes) when the file is first opened; it must subsequently read and write to specific records within the file. (3) A component of an object module format (OMF) segment. All OMF file segments are composed of records, some of which are program code and some of which contain cross-reference or relocation information. Each record begins with an operation code that indicates the type of information to follow.

Recursion: The continued repeating of an operation or a group of operations. A recursive procedure or function is one that, while running, calls itself.

Refresh rate: Number of times each second the video dissplay is rewritten by the electron beam inside the monitor's picture tube. The higher the refresh rate, the less the flicker and the more stable the picture.

Region: An arbitrary area or set of areas on the QuickDraw coordinate plane. The outline of a region should be one or more closed loops.

Relational database: database program capable of linking data items of one type of record to records of a different type. This allows cross-referencing information throughout the database.

Relational operator: An operator, such as > (greater than), that operates on numeric values to produce a logical result. Compare arithmetic operator, Boolean operator.

Release: a particular "version" of software.

ResEdit: Application software used to modify resource files.

Resolution: Density of pixels per inch on the video screen. The higher the density, the easier to see small items (like icons) clearly.

Resource attribute: One of several characteristics, specified by bits in a resource reference, that determine how the resource should be dealt with.

Resource compiler: A program that creates resources from a textual description. The MPW Resource Compiler is named Rez.

Resource data: In a resource file, the data that makes up a resource.

Resource description file: In MPW, a text file that can be read by the Resource Compiler and compiled into a resource file. The Resource Decompiler disassembles a resource file, producing a resource description file as output.

Resource file: Common usage for the resource fork of a Macintosh file.

Resource fork: The part of a file that contains data used by an application, such as menus, fonts, and icons. An executable file's code is also stored in the resource fork. Sometimes called a resource file.

Resource header: At the beginning of a resource file, data that gives the offsets to and lengths of the resource data and resource map.

Resource ID: A number that, together with the resource type, identifies a resource in a resource file. Every resource has an ID number.

Resource Manager: A Macintosh tool for editing data in program segments without recompiling them.

Resource map: In a resource file, data that is read into memory when the file is opened and that, given a resource specification, leads to the corresponding resource data.

Resource name: A string that, together with the resource type, identifies a resource in a resource file. A resource may or may not have a name.

Resource reference: In a resource map, an entry that identifies a resource and contains either an offset to its resource data in the resource file or a handle to the data if it's already been read into memory.

Resource type: The type of a resource in a resource file, designated by a sequence of four characters (such as | MENU ' for a menu).

Resource: (1) A file contained in the System Folder that provides information the microprocessor needs to communicate with certain devices attached to the computer system. A printing resource is a system file that lets you print on a corresponding printer attached to the computer. (2) Data or code stored in a resource file and managed by the Resource Manager.

Restriction enzyme: a protein that produces double-stranded breaks in DNA molecules at positions where they attack a particular sequence of nucleotides.

Restriction mapping: treatment of DNA with multiple restriction enzymes in order to locate the relative locations of restriction enzyme recognition sequences within the DNA molecule.

RGB (red, green, blue): Common method of specifying any color by component primary colors. RGB mnonitor receives separate signals for each primary color, yielding better color definition than available from composite (NTSC) video signal.

RGB monitor: A type of color monitor that receives separate signals for each color (red, green, and blue).

RGB: Abbreviation for red-green-blue; a method of displaying color video by transmitting the three primary colors as three separate signals. There are two ways of using RGB with computers: TTL RGB, which allows the color signals to take on only a few discrete values; and analog RGB, which allows the color signals to take on any values between their upper and lower limits, for a wide range of colors.

ROM (Read-Only Memory): Chips containing information 'burned in' permanently at the factory. Contents can't be changed by program or user.

Router: hardware that routes data from a local area network (LAN) to phone lines. Routers act like a sorting machine, allowing only authorized machines to send data through a LAN so that private information can remain secure. Routers also handle errors, security issues,and keep statistics about what's going on in the network.

Routine: A part of a program that accomplishes some task subordinate to the overall task of the program.

Runtime: the time when program code is actually being executed during the creation of an application program. Forms and functions can't be altered during this time. (cf 'design time')

SANE: See Standard Apple Numerics Environment.

Satellite DNA: DNA fragments in eukaryotic cells; they contain little if any information compared to other genomic data.

Save: To store information by transferring it from main memory to a disk. Work not saved disappears when you switch off the computer or when the power is interrupted.

Scanner: a device that converts images into digital form so they may be stored and processed by computers.

Scientific notation: A method of expressing numbers in terms of powers of 10, useful for expressing very small or very large numbers. For example, 6.02E23 means 6.02 times 10 to the 23rd power. (The E stands for exponent.) The number is easier to understand in this form than as 602000000000000000000000.

Scope: the attribute of a variable or procedure that determines which sections of which modules recognize it. The three levels of scope are public, module and procedure. 'Public' and 'Private' identify variables accessible in every module or only the module in which it is defined; variables declared in a procedure can be used only within that procedure.

Scoring matrix: a matrix used to score each nongap position in an alignment.

Scrap file: The file containing the desk scrap (usually the Clipboard).

Scrap Manager: The part of the Toolbox that enables cutting and pasting between applications, desk accessories, or an application and a desk accessory.

Scrap: A place where cut or copied data is stored.

Scrapbook: Small program that provides a storage area for any information copied from a document. Contents are saved even after computer is powered down.

Screen font: A font displayed on the Macintosh screen, of which the LaserWriter has equivalent built-in (printer) fonts.

Screen saver: Extension or control panel program that blanks the computer screen or displays randomly moving images to prevent burn-in of previous image. Example: After Dark.

Screen shot: A graphic document that is like a snapshot of a Macintosh screen. Make a screen shot on the Macintosh by holding down the command and shift keys and pressing 3.

Script interface system: Special software that supports the display and manipulation of a particular script.

Script: (1) A writing system, such as Cyrillic or Arabic. The English language uses Roman script. (2) In HyperCard, a series of commands written in HyperTalk and associated with a particular object such as a button, a field, a card, or a stack. (3) A file containing commands.

Scroll arrow: An arrow at either end of a scroll bar. Clicking a scroll arrow moves a document or directory one line. Pressing a scroll arrow moves a document continuously.

Scroll bar: A rectangular bar that may be along the right or bottom of a window. Clicking or dragging in the scroll bar causes the view of the document to change.

Scroll box: The white box in a scroll bar. The position of the scroll box in the scroll bar indicates the position of what's in the window relative to the entire document.

Scroll: (1) To move a document or directory in its window so that a different part of it is visible. (2) To move all the text on the screen upward, downward, or sideways.

SCSI: Industry-standard interface for hard disks and other computer peripherals, allowing for rapid rate of data transfer. Abbreviation for Small Computer System Interface, pronounced "scuzzy".

Search Engine: any of the web sites or its computer programs which allow you to search for certain types of information based on key words entered.

Seek time: The time in milliseconds taken for a disk drive to find a particular track of data on a disk.

Selection: (1) The information or items that will be affected by the next command. The selection is usually highlighted. (2) A series of characters, or a character position, at which the next editing operation will occur. Selected characters in the active window are inversely highlighted. Also called selection range.

Sequence: (n) the linear order of nucleotides in DNA or RNA molecules or amino acid residues in a peptide. (v) to experimentally determine the order of nucleotides or amino acids.

Serial interface: A method of transmitting data in which each bit of a byte of information is transmitted sequentially over the same electrical line. At least one line is necessary for this type of transmission.

Server: see client.

Server-side: in a Web application, the part of the application run by the server. (cf: the client's Web Browser).

Shareware: Software freely distributed by its author, who asks users to try the software for free, but to pay a modest licensing fee by mail for continued use.

Shell: the program which creates a command line for typed commands is often called the "shell" while a graphic command interface is called a GUI. Shells give you a command prompt (like the "C:" for DOS and either a "$" or "%" for UNIX).

Shift key: A key that, when pressed, causes the subsequent letter that are typed to appear in uppercase or the top symbol on a two-character key to be produced. The shift key can also modify mouse actions. See shift-click, shift-drag.

Shift-click: A technique that allows the user to extend or shorten a selection by positioning the pointer at the end of what the user wants to select and holding down the shift key while clicking the mouse button.

Shift-drag: A technique that allows the user to select multiple objects by holding down the shift key while dragging diagonally to enclose the objects in a rectangle.

SIG: (Special Interest Group) A computer user group sharing common interests in an application area (like graphics, or medicine) SIG Or, an -mail discussion group, also called a forum.

Signature: A four-character sequence that uniquely identifies an application to the Finder.

SIMM: single in-line memory module, dynamic RAM chips used by computers like the Macintosh.

SINE: short interspersed nuclear element.

Size box: A box in the lower-right corner of some active windows. Dragging the size box resizes the window.

Slash or forward slash (/) is used in web addresses, unix directories, etc. to indicate subdirectories (or folders)

Slot: A plug-in connector in the central processing unit, in which additional hardware cards may be inserted. This connector is directly wired to the computer's main electronic data bus. See also card.

Small Computer System Interface (SCSI): A specification of mechanical, electrical, and functional standards for connecting peripheral devices such as certain kinds of hard disks, printers, and optical disks to small computers.

SneakerNet: Physical transfer of files from computer to computer by using a floppy disk and walking from one computer to the other.

Socket: On a network, a communication mechanism originally implemented on the BSD version of the UNIX operating system. Sockets are used as endpoints for sending and receiving data between computers.

Software overrun error: The condition that occurs when an input driver's buffer becomes full.

Software pirate: A person who copies applications without the permission of the author. To copy software without permission is illegal.

Software: A collective term for programs, the instructions that tell the computer what to do. Software is usually stored on disks.

Source code (program): A computer program in its original high-level language form before it has been translated into object code.

Source file: An ASCII file consisting of instructions written in a particular language, such as Pascal or assembly language. An assembler or compiler converts source files into object files.

Source program: The form of a program given to a language translator, such as a compiler or an assembler, for conversion into another form; sometimes called source code. Compare object program.

Source volume: The original volume, as opposed to the duplicate (destination) volume. When you are making a copy of a file or a volume, the source volume is the volume from which you are copying. Compare destination volume. See also volume.

Spam: junk mail on the Internet. The most common form of spamming it can be used as a verb or nown) is through e-mail. Annoying postings to a newsgroup or bulletin board.

Special Menu: Finder menu containing maintenance commands for cleaning up window contents, emptying trash, restarting, and shutting down.

Spliceosomes: enzyme complexes responsible for splicing.

Spool (spooling): An acronym for Simultaneous Peripheral Output On Line; also refers to input. Spooling is a software feature that allows slow devices in a system to place or receive their information in buffers, therefore not slowing the processor.

Spreadsheet software: A software package that acts as a hybrid between a high-level programming language, data base, calculator, and ledger pad. It has the ability to numerically process data and provide multiple foredasts for such areas as financial planning and trend analysis.

Stack: (1) In a computer, a portion of memory that is used for temporary storage of operating data during operation of a program. The data on the stack are added (pushed) and removed (pulled or popped) in last-in, first-out (LIFO) order. (2) A HyperCard document; a group of cards based on the same theme.
Stack-based routine: A Toolbox or Operating System routine that receives its parameters and returns its results, if any, on the stack.
Standard Apple Numerics Environment (SANE): The set of methods that provides the basis for floating-point calculations in Apple computers. SANE meets all requirements for extended-precision, floating-point arithmetic as prescribed by IEEE Standard 754 and ensures that all floating-point operations are performed consistently and return the most accurate results possible.
Standard ASCII character: Synonymous with low ASCII character.
Standard File Package: A Macintosh package for presenting the standard user interface when a file is to be saved or opened.
Start codon: triplet, AUG, at which ribosomes begin to translate an mRNA into protein.
Statement: A unit of a program in a high-level language that specifies an action for the language.
Stem: region of an RNA molecule where intramolecular base pairing is found.
Step value: The amount by which the index variable changes on each pass through a loop.
Step: the act of moving through a section of program code one line at a time, or up to a breakpoint. Useful in debugging a program.
Sticky ends: single-stranded DNA at the cleaved end of a double-stranded fragment.
Stop codon: any of UGA, UAG, UAA codons not coding for insertion of an amino acid at a ribosome and thus cause mRNA translation to stop.
Streaming: commonly used in the terms "audio streaming" or "video streaming," when data moves from one computer to another and doesn't have to be completely downloaded for the receiving computer to utilize it. Multimedia files like Real Audio and QuickTime 4.0 documents are streaming; you can actually watch a video or listen to a sound file as it's being downloaded to your computer.
String: any specified sequence of characters such as letters, numbers and punctuation marks- a word, phrase, or document.
Stringency: a parameter that allows you to filter the results of a sequence query based on how closely related the sequences in a gene bin must be.
Structured language: A type of programming language in which programs are built out of smaller subprograms. Pascal is an example of a structured programming language.
Structured programming: A programming method that advocates the formulation of programs into small modules in creating a software package. This method makes programs easier to write and modify by giving them a highly formal structure; thus, they can be easily modified by the user if the structure is known.
Subroutine: A self-contained section of a program that performs a specific but limited task. Equivalent to a module in a structured program.
Subscript: the index value of an element within an array.
Superfamily: groups of protein families showing a detectable level of sequence similarity indicating common ancestors.
Symbol: A character or string of characters that represents an address or numeric value; a symbolic reference or a variable.
Synonymous substitution: a change of codon which doesn't cause a change in the amino acid composition of a protein.
Syntax error message: A message generated when the computer cannot understand a command. The cause could be anything from mistyping a word to using a nonexistent command.
Syntax: (1) The rules governing the structure of statements or instructions in a programming language. (2) A representation of a command that specifies all the possible forms the command can take.
Sysop: Systems Operator -- an owner or manager of a bbs, site, forum, service, etc..
System file: Any file the computer uses to start itself up or to provide systemwide information. Although system files are represented by icons just as documents and applications are, they cannot be opened in the usual way. However, the contents of system files can be altered.
System font size: The size of text drawn by the system in the system font: 12 points.
System font: The font that the system uses (in menus, for example). In Roman-based writing systems, the system font is Chicago.
System heap: The portion of the heap reserved for use by the operating system.
System program: A program that makes the resources and capabilities of the computer available for general purposes, such as an operating system or a language translator. Compare application program.
System Resource File: A resource file containing standard resources, accessed if a requested resource was not found in any of the other resource files that were searched. Also called the System file.
System resource: A resource in the System Resource File.

System software: The component of a computer system that supports application programs by managing system resources such as memory and I/O devices.

System window: A window in which a desk accessory is displayed.

System: The hardware (input/output devices, central processing unit, storage), software, and all related components of the computer combined. May also be used to describe all the associated nodes in a local area network.

T1: a data transfer system that transfers digital signals at 1.544 megabits per second (a lot faster than a 56K modem, which achieves, at best, 0.056 mb/sec). Because of the T1's large bandwidth, hundreds of people can be accessing the Internet from one T1 line with little slowdown, but too many people on one T1 line can cause dramatic decreases in data transfer speeds.

T3: transfer system 30 times faster than T1, supporting data transfer rates of 44.736 megabits of data per second.

Tab key: A key that, when pressed, generates the horizontal tab character. The key's action is to move the insertion point or cursor to the next tab marker, or, in a dialog box with more than one place to enter information, to the next rectangle. The tab key thus works essentially like a typewriter tab key.

Tape drive: See Digital cassette drive.

Tape, magnetic: A continuous ribbon of magnetic-coated material wound on a reel or cassette; used as a mass storage device.

Teach Text: A simple text-editing program supplied with system software to allow user without more elaborate word processing software installed to read documents.

Tear-off menu: Any menu that can be detached from the menu bar by pressing the menu title and dragging beyond the menu's edge. The tear-off menu appears in a window or miniwindow on the desktop. Once torn off, it is called a palette.

Template: A predefined set of conteTextEdit: The part of the Toolbox that supports the basic text entry and editing capabilities of a standard Macintosh application.

Terminal: An input/output device consisting of a keyboard, communications line, and video display.

Text window: A window on the desktop within which text is displayed and scrolled.

Throughput: The productivity of a system based on all aspects of its operation. This may be used as a measure of a system's processing power.

Thumbnail: a small graphic image which gives you enough information to decide if you want to see it full-sized. Many galleries of images on web-sites have the images in thumbnail, rather than making you download each large image one at a time.

TIFF (or .tif): Tagged Image File Format -- an older but still common graphics file type.

Tilde: the tilde (~) used in web addresses usually indicates a particular subdirectory.

Time Manager: The part of the Macintosh Operating System that lets a routine be scheduled to be executed after a given number of milliseconds have elapsed.

Title Bar: Window element stretched across top of a window, featuring the name of the document or the name of the folder whose contents are shown in the window. Horizontal lines in titlebar indicate an active window.

Tme-sharing: The use of a single computer for two or more functions or by two or more users during the same period of time. Time-sharing is performd by interspersing in time the actions of the peripheral hardware devices and the central processing unit. Most mainframes are used in this manner.

Toggle: something like a format which turns on and off each successive time you select it by an appropriate command. For example, on a Macintosh word processing program, underline or italic print, ruler display, etc., are toggled.

Tool palatte: Free-standing window containing icons representing graphics tools; clicking on tool turns the screen pointer into that tool icon.

Toolbox Event Manager: In the Macintosh, the part of the Toolbox that allows an application program to monitor the user's actions with the mouse, keyboard, and keypad.

Toolbox functions: In the Macintosh, a collection of built-in routines that programs can call to perform many commonly needed functions.

Toolbox utilities: The part of the Toolbox that performs generally useful operations such as fixed-point arithmetic, string manipulation, and logical operations on bits.

Toolbox: in the VB IDE, this contains the objects and controls available for use in an application; these objects may be dragged and positioned on the project's form during design time.

Trackball: a mouse alternative: roller ball position is controlled by fingertips or palm to position cursor.

Translator: A program that converts a sequence of instructions in one computer language to an equivalent sequence of statements or code in another. Compilers, assemblers, programming languages, and interpreters are types of translators.

Transliteration: in Perl, the replacement of characters with corresponding characters from another character set, performed by the “tr” operator.

Trash: Desktop icon where files can be dragged when they are to be removed from the disk.

Trojan Horse: a nasty surpise in disguise -- usually, a virus or other program attached to mail; if you open it (by running it) the surprise may attacking your hard drive or files in some manner. Never open an attachment sent by somebody you don't know.

Turnkey system: A complete computer system for which a single vendor assumes cmplete responsibility for hardware and software maintenance and installation. Many mainframe time-sharing systems are turnkey systems.

TWAIN: a common image protocol for scanners. It allegedly stands for "Technology Without An Interesting Name."

Twip: in VB, a screen-independent distance equal to approximately 1/1,440 of an inch. Objects may be sized and located by using twips rather than pixels so that they appear similarly on various sizes of display screens.

Type declaration character: a character added to a variable's name that determines that variable's data type. For example, '%' identifies integer variables, so a statement 'Dim x%' would automatically define this variable as an integer type.

Type: the attribute of a variable that determines what kind of data it may contain. Types include Integer, Long, String, Variant, etc.

Unary operator: An operator that applies to a single operand. For example, the minus sign (-) in a negative number such as -3 is a unary arithmetic operator. Compare binary operator.

Unconditional branch: A branch that does not depend on the truth of any condition. Compare conditional branch.

UNIX: this is the primary operating system which is used on net-linked mid-range and main-frame computers, such as the mail servers at SDSU.

Unload: To remove a load segment from memory. To unload a segment, the System Loader does not actually "unload" anything; it calls the Memory Manager to either purge or dispose of the memory block in which the code segment resides. The loader then modifies the Memory Segment Table to reflect the fact that the segment is no longer in memory.

Unlock: (1) To remove the restriction on the use of a disk or a file so that it can once again be changed, deleted, or renamed. (2) To allow a relocatable block to be moved during heap compaction.

Unmount: To remove a file system from the directory hierarchy. Local file systems are unmounted with the unmount command; remote file systems accessed via the Network File System are unmounted with the unmount command. Compare mount.

Unmounted volume: A volume that has not been inserted into a disk drive and had descriptive information read from it, or a volume that previously was mounted and has since had the memory used by it released. Compare mounted volume.

Unmounting: Removing a disk from the desktop by dragging its icon to the trash, causing a floppy disk to eject.

Unpurgeable: Having a purge level of 0. The Memory Manager is not permitted to purge memory blocks whose purge level is 0.

Update event: An event generated by the Window Manager when a window's contents need to be redrawn.

Update region: A window region consisting of all areas of the content region that have to be redrawn.

Update: The modification of a file with current information according to a specified procedure.

Uploading: sending information from your own computer to another, possibly distant, computer.

Upstream promoter element: nucleotide sequences associated with eukaryotic gene promoters to which promoters other than RNA polymerase will bind.

URL: Universal (or Uniform) Resource Locator. An internet address, used in hypertext. An example would be: http://www.gnofn.org/~tlewis/home.htm

USB: "Universal Serial Bus." Allows daisy chaining 127 peripherals to a single USB port;. faster than older ports, supporting data transfer rates of up to 12Mb/sec; introduced in 1997, designed by Intel, Compaq, Digital, and IBM.

User friendly: Indicates that a program was designed for the nonexpert; also implies that a program is easily mastered and prompts the user as to the correct responses and options at any point in the program.

User Interface Toolbox: The software in the Macintosh ROM that helps implement the standard Macintosh user interface in an application.

User interface: The rules and conventions by which a computer system communicates with the person operating it.

User: A person operating or controlling a computer system.

Utilities: Standard software programs or subroutines that are supplied with the computer system. Examples include directory listing, diagnostic hardware, testing software, and file manipulation routines; often acquired with the operating system.

Value: An item of information that can be stored in a variable, such as a number or a string.

Vaporware: software that's been announced by a vendor, but just never seems to be released.
Variable: (1) A location in the computer's memory where a value can be stored. (2) The symbol used in a program to represent such a location. Compare constant.
VBA (Visual Basic for Applications): a subset of the VB language used in other commercial (Microsoft) applications like Access or Excel, where it serves as the scripting language used to create macros.
Version data: In an application's resource file, a resource that has the application's signature as its resource type; typically a string that gives the name, version number, and date of the application.
Video display terminal: A hardware device that outputs data by visual display on a cathode ray tube (similar to a television screen).
View menu: Finder menu allowing selection of file and folder names or icons inside Finder Windows.
Viewport: All or part of the display screen used by an application program to display a portion of the information (such as a document, picture, or worksheet) on which a program is working. Compare window.
Virtual machine: The software method that allows each user in a time-sharing system to interact with the computer as if the computer were dedicated to only that user. This is performed by serially polling the input and output devices connected to each user in rapid but transparent succession.
Virtual memory: Memory space that is separate from the main memory (physical RAM) and is instead located in auxiliary memory media (usually disks). The ability of a system to address virtual memory space is important for multitasking operating systems and applications too large to be handled in RAM alone.
Virtual peripheral: The same concept as a virtual machine applied to a peripheral hardware device connected to many users.
Virus: a program whose sole purpose is to surrepititiously invade computers and modify the resident data and programs, usually destructively.
VMS: a main-frame operating system, designed for multiple users, running on Digital Equipment Corporation computers like the VAX. Similar in concept to UNIX, but the commands, applications, etc. are all very different and more english-like. Still supported by Compaq, the company who bought out DEC.
Voice recognition: Technology and corresponding software that allows spoken commands to be digitized and compared against a list of stored speech samples. A feature of the Macintosh "AV" product line.
Volume attributes: Information contained on volumes and in memory indicating whether the volume is locked, whether it's busy (in memory only), and whether the volume control block matches the volume information (in memory only).
Volume directory: The main directory file of a volume. It contains the names and locations of other files on the volume, any of which may themselves be directory files (called subdirectories). The name of the volume directory is the name of the volume. The pathname of every file on the volume starts with the volume directory name.
Volume name: (1) The name of the volume directory. (2) A sequence of up to 27 printing characters that identifies a volume; followed by a colon (:) in File Manager routine calls, to distinguish it from a filename. (3) The name of a disk or its main directory. Compare pathname.
Volume: A general term referring to a storage device or to part of a storage medium formatted to contain files; a source of or a destination for information. A volume can be an entire disk or only part of a disk. A volume has a name and a volume directory with the same name. Its information is organized into files.
Voxel: contraction for a “volume element” in a three-dimensional rendered object; a 3-D extrapolation of a “pixel” (see which). May be addressed in x,y,z rectilinear coordinates or in other coordinate systems (e.g. spherical, cylindrical). Voxel value may correspond to some property of the rendered object, such as concentration of material, temperature, color, etc.
VRML: Virtual Reality Modeling Language - thought to be a coming addition to the WWW, adding 3-d interactive models to web-sites. It is supported by recent versions of Netscape.
Warm start: The process of transferring control back to the operating system.
Wav: a common type of audio file.
Waveform description: A sequence of bytes describing a waveform.
Waveform: The shape of a wave (a graph of a wave's amplitude over time).
Wildcard character: A character that may be used as shorthand to represent a sequence of characters in a pathname. A common wildcard character is the asterisk (*). VIP-BASIC uses the asterisk, the question mark, and the plus symbol (+).
Window class: In a window record, an indication of whether a window is a system window, a dialog or alert window, or a window created directly by the application.
Window Manager port: A GrafPort that has the entire screen as its PortRect and is used by the Window Manager to draw window frames.
Window Manager: The part of the Toolbox that provides routines for creating and manipulating windows.

Window: (1) The area that displays information on a desktop; a document is viewed through a window. Windows can be opened or closed, moved around on the desktop, resized, or scrolled, and its contents can be edited. (2) The portion of a collection of information (such as a document, picture, or worksheet) that is visible in a viewport on the display screen. Each window is internally represented in a window record. Compare viewport.

Windows: operating system for the PC. Windows NT4 and Windows 98 and 2000 have internet software built-in and are the world's most widely used operating systems.

Wintel: abbreviation for Windows (Microsoft operating system software) running on Intel chip hardware (like a Pentium III).

Wizard: part of an application that helps users complete what might otherwise be a difficult multistep procedure. Each step prompts the user for the information required and choices to be selected. (An example in VB is the Data Form Wizard.)

Word (bioinformatics): a subsequence of fixed length used in a sequence search algorithm in which a query sequence is divided into fixed sized words to find occurrences of those words in a sequence database.

Word processing: A set of automated functions that aid in the production of documents. Software that performs this task allows text editing, formating, storage, and printing.

Word: The computer's native unit of data. The Macintosh II uses a 32-bit word. A NuBus word is 32 bits long; a half-word is 16 bits. An SE Bus or 68000 word is 16 bits long; a half-word is 8 bits.

WORM: Write Once, Read Many (times) memory. High capacity.

WPI: Wisconsin Package Interface, graphical user interface to the GCG package

WWW: World Wide Web, a collection of millions of linked documents on the iInternet, exchanged among clients and servers using the Hypertext Transfet Protocol (HTTP). These documents can include text, graphics, sound and video.

WYSIWYG: Pronounced wisseewig, the acronym for "what you see is what you get." Implies that the screen display is exactly what a printed hardcopy output will look like.

XCMD: Resource identifier for a HyperCard external command. Attached to a Stack, an XCMD extends the HyperTalk language (e.g. by adding color to a card).

XML: "Extensible Markup Language." A web development format for defining specialized markup languages which can be used to transmit data that is formatted for a specific purpose. Related to the hyper-text markup language (HTML); not a markup language, but rather a meta-language.

XOR: See exclusive OR.

YAC: Yeast Artificial Chromosome (see cloning vector) used to clone DNA fragments up to 1 Mb.

Yahoo: a great search site for the Web. http://www.yahoo.com

Zip: trade name for inexpensive removeable 3-1/2" hard disk cartridge made by Iomaga Corp., in 100, 250 and 750 MB capacities.

zip: the most common file/program compression program.

Zoom box: A small box with a smaller box enclosed in it found on the right side of the title bar of most windows. Clicking the zoom box expands the window to its maximum size; clicking it again returns the window to its original size.