

FULL IT GLOSSARY

- **32-bit/16-bit:**

There are many advantages that 32 bit has over the 16 bit applications. 32 bit application have their own address space which creates a stable environment for a computer system. Whereas the 16 bit version runs in a shared address space which means if you experience a 16 bit application crash, it can crash the entire system. In addition, 32 bit runs much faster, it can handle multitasking and can handle much longer filenames than can the 16 bit application.
- **Absolute Address:**

The exact memory location of data or a specific location within a device.
- **Absolute Reference:**

A formulated cell reference that will not adjust when used to calculate the sum of specific cells. Most commonly used in spreadsheet applications.
- **Access Point:**

A networking connection device that is also known as the base station. This is a wireless hardware connection device that connects to a wired network to create wireless operation. Its point of access is a local area network (LAN).
- **AI:**

Stands for Artificial Intelligence. This is the area of computer science focusing on creating machines that can engage on behaviors that humans consider intelligent. The ability to create intelligent machines has intrigued humans since ancient times, and today with the advent of the computer and 50 years of research into AI programming techniques, the dream of smart machines is becoming a reality. Researchers are creating systems which can mimic human thought, understand speech, beat the best human chess player, and countless other feats never before possible.
- **ACPI:**

Advanced Configuration and Power Interface. This interface was first introduced in 1996 and was developed to control computer devices power distribution. For example, if a device was currently not in use, the ACPI would turn this device off to create more power where necessary for smoother operation.
- **Active Matrix:**

A type of LCD (liquid crystal display) structure that is actively controlled by a diode or transistor. This allows for each pixel to be independently controlled which produces excellent color resolution.
- **Active X:**

A software technology developed by Microsoft. This is based on other technology Microsoft developed such as; COM (Component Object Model) and OLE (Object Linking and Embedding). Active X defines how applications share information. While Active X gives much more freedom as to how certain applications are viewed, it has inherent security risks.
- **Actuator:**

Device that performs an action or outputs a signal in response to a signal from a computer.
- **Addressing:**

A method of identifying a resource (such as a program) or piece of information (such as a file) on a network. Methods of addressing vary considerably from network-to-network.
- **Adware:**

A software program that is designed to run once a web page has been accessed. This is usually in the form of banner or popup advertisements. Adware can also be designed to be installed on your system without your consent or knowledge. These forms of adware are usually referred to as "spyware" and are used to monitor your surfing habits so that their software can deliver better targeted advertisements. In other instances, the software can be designed to monitor your keyboard keystrokes so that the author of the software can gain access to your password protected accounts. This type of adware is referred to as "malware" due to its malicious intent.
- **Aero:**

Aero is the name of Windows Vista's new graphical interface that gives users an exciting new desktop look and feel. It stands for: Authentic, Energetic, Reflective and Open. It is designed to be very aesthetically pleasing. Its effects include:

 - Glass effects

- Advanced Window Management features
- Desktop Composition which creates a more stable experience

- **AGP:**
Stands for Accelerated Graphics Port. This interface specification was developed by Intel Corporation. It was designed to give lower costing graphics cards much faster access to the main memory on personal computers.
- **AGTL Signaling:**
(Assisted Gunning Transistor Logic) AGTL and AGTL+ use the same signaling protocol only at different voltage levels. AGTL+ operates at 1.5V signaling levels, while AGTL operates at 1.25V.
- **Algorithm:**
A formal set of instructions that can be followed to perform a specific task, such as a mathematical formula or a set of instructions in a computer program.
- **Alias:**
A shortcut or 'friendly name' that points to a file folder or application. As an example, when you enter in a user name for an application, this user name would be an 'alias'.
- **Aliasing:**
This refers to the distortion in a sound or image generation. A sound distortion occurs when digitally recording high frequencies with a low sample rate. An image distortion occurs when a printer, monitor or graphic file has an insufficient amount of resolution to display an image properly.
- **AMD:**
(Advanced Microchip Devices) A semiconductor manufacturer and is a major competitor of Intel. They manufacture the Athlon, Duron, and K6 CPU chips.
- **Analog:**
Anything whose behavior corresponds with the behavior of something else, especially if the correspondence varies continuously rather than in steps. For example, the height of the liquid in a thermometer is an analog of the temperature. The signals that go from a computer to a composite monitor are analog voltages.
- **AppleTalk:**
A protocol suite developed by Apple Computer in the early 1980s, was developed in conjunction with the Macintosh computer. AppleTalk's purpose was to allow multiple users to share resources, such as files and printers. The devices that supply these resources are called servers, while the devices that make use of these resources (such as a user's Macintosh computer) are referred to as clients. Hence, AppleTalk is one of the early implementations of a distributed client/server networking system.
- **AppleScript:**
It is a kind of English-like language that is used to write specific script files which have the ability to automate the actions of the computer systems and applications that run on it.
- **AppleShare:**
This is Apple's network system. It is to the Macintosh what FTP is to the PC.
- **Applet:**
An applet is a small program generally written in the Java programming language that was designed to provide interactivity on web pages.
- **Application:**
An application is a program that is designed to perform specific tasks. A few examples of some popular applications are:
 - Microsoft Windows
 - Microsoft Word
 - Adobe Photoshop
 - Internet Explorer
- **Application Server:**
This is a specialized server based in a client/server network that has the sole responsibility of running specific applications within that network.
- **Archie:**
Or ArchiePlex which is an Archie gateway for the World Wide Web. It can locate files on Anonymous FTP sites

in the Internet.

- **Archive:**
This usually defines old files that are no longer in use and are stored for possible future use or reference.
- **Arithmetic Logic Unit (ALU):**
Arithmetic Logic Unit. This is a mathematical core circuitry that applies to all computers central processing units (CPU). ALU mathematically and logically calculates the results of binary data.
- **ASCII:**
It stands for "American Standard Code Information Exchange" and is pronounced (ask-ee). A standard code or protocol for displaying characters and transferring data between computers and associated equipment. It was developed for the purpose of information exchange among the following:
 - Associated equipment
 - Data communications systems
 - Data processing systemsThere are 128 standard ASCII codes each of which can be represented by a 7 digit binary number: 0000000 through 1111111.
- **Asynchronous:**
 - 1 : not synchronous; not occurring or existing at the same time or having the same period or phase.
 - 2 : of, used in, or being digital communication (as between computers) in which there is no timing requirement for transmission and in which the start of each character is individually signaled by the transmitting device.
- **ASP:**
In computing, this stands for "Active Server Pages". Developed by Microsoft and is designed as a web server extension which is a default scripting language for writing VBScript.
- **ATA:**
Short for "Advanced Technology Attachment", this is a disk drive implementation developed by the Small Form Factor (SFF) Committee that integrates the controller on the disk drive itself. There are many versions of ATA, which include:
 - ATA: Also known as as IDE, supports one or two hard drives, a 16-bit interface and PIO modes 0, 1 and 2.
 - ATA-2: Supports faster PIO modes (3 and 4) and multiword DMA modes (1 and 2). Also supports logical block addressing (LBA) and block transfers. ATA-2 is marketed as Fast ATA and Enhanced IDE (EIDE).
 - ATA-3: Minor revision to ATA-2.
 - Ultra-ATA: Also called Ultra-DMA, ATA-33, and DMA-33, supports multiword DMA mode 3 running at 33 MBps.
 - ATA/66: A version of ATA proposed by Quantum Corporation, and supported by Intel, that doubles ATA's throughput to 66 MBps.
 - ATA/100: An updated version of ATA/66 that increases data transfer rates to 100 MBps.
- **ATM:**
"Asynchronous Transfer Mode". This is an International standard for cell relay where multiple service types (such as data, video or voice) are communicated in cells that are of a fixed length (53-byte).
- **ATX:**
This doesn't stand for anything that I could find. It is a very popular specification for motherboards in computing. It was designed to take the older AT motherboards, often referred to as "Baby AT" (an earlier standard) and rotating it 90 degrees to allow for more available space for add-in cards.
- **autoexec.bat:**
A root directory batch file that is responsible for executing commands at system startup.
- **AVI:**
Stands for "Audio/Video Interleaved". To date, AVI is the most common format for audio/video data on the personal computer.
- **Backbone:**
This computer term describes the main line or series of connections in a network. The backbones are connection points where high-speed data on the Internet connects to networks.
- **Backup:**
To copy files to a second source or media in an effort to safeguard the original version. When computer, the first rule is to backup your files regularly. Even if you think you have the most reliable of computers, you just never

know when its time is up. It is recommended that you keep your backup copy in a separate place from the original.

- **Bandwidth:**
A measurement of how much data that can be sent through a connection. The measurement is usually in bits per second.
- **Baseband:**
A method of transmission that sends a digital or analog signal in its original form, not changed by modulation. While this form of transmission can be much more reliable than its Broadband counterpart, it is much slower.
- **Batch File:**
A file that has the .BAT extension. This file usually contains a sequence (or batch) of commands. A batch files set of commands can be executed all at once by the batch file name rather than by each individual command name.
- **Baud:**
Pronounced bawd>. This term is named after J.M.E. Baudot who invented of the Baudot telegraph code. Commonly, the baud rate of a modem is how many bits it can send or receive per second. Technically, baud refers to the number of times per second that the carrier signal shifts value. As an example, a 1500 bit-per-second modem actually runs at 375 baud, but it moves 4 bits per baud (4 x 375= 1500 bits per second).
- **BBS:**
Stands for **Bulletin Board Service**. A program designed to bring people together where they can carry on discussions and download files where all of the other members of the service can monitor these transmissions in real time.
- **Beta:**
A testing stage for products (both hardware and software) that are being developed. It is referred to as the "beta version".
- **BIOS:**
Stands for **Basic Input/Output System**. The BIOS gives the computer a little built-in starter kit to run the rest of softwares from floppy disks (FDD) and hard disks (HDD). The BIOS is responsible for booting the computer by providing a basic set of instructions.
- **Binary:**
A basic numbering system that consists of ones and zeros.
- **Bit:**
(**Binary DigIT**) This refers to a single digit number. It is either a 1 or a zero. The binary digit is the smallest unit of computerized data.
- **Bit Depth:**
Bit Depth can be referred to as Color Depth or Pixel Depth. It refers to a method of measurement where using the number of bits to define each pixel in an image to determine its color range. The larger the Bit Depth, the larger number of tones (grey scale or color) are available to properly display the digital image.
- **Bitmap:**
A file format used for digital imagery. This format maps an image pixel (or bit). All computer systems use this file format. Some of the common types of bitmap file formats would be:
 - BMP
 - GIF
 - JPEG
 - PCX
 - PNG
 - TGA
 - TIFF
- **Blog:**
(Slang term for a Weblog) A blog is a person journal that can be accessed publicly and allow people to comment on the previously posted comments. When someone posts a comment to a blog this is called "blogging". The person that owns the blog is called a "blogger". Most typically, blogs are updated on a daily basis and use the most basic of formats so that a person with very little background in computing can easily figure out how the blogging system works.

- **Blu-ray:**
Also known as Blu-ray Disc. This is an optical disc format that was developed to enable recording, playback, and rewriting of high-definition (HD) video. This technology has a storage capacity far greater than that of traditional DVDs. A single-layer disc can hold up to 25GB while a dual-layer disc can hold up to 50GB. DVD disc technologies use a red laser to read and write data. Blu-ray uses a blue-violet laser (hence the name). The benefit of the blue-violet laser over the red laser is its ability to focus the laser spot with greater precision because of its shorter wavelength. A red laser's wavelength is 650nm while the Blu-ray's wavelength is 405nm.
- **Bluetooth:**
Radio technology that connects electronic devices without using a cable. Data and voice can be exchanged at ranges of up to 10 meters without the need for devices to be lined up together.
- **BMP:**
(pronounced "bimp"): It is a Microsoft Windows image file format known as bitmap.
- **BNC:**
In computing, a Bayonet Network Connector is commonly used in the CCTV industry, usually installs on coaxial cable. The benefit of this connector is its ease of installation and its ability to produce a very reliable video signal.
- **Boolean Logic:**
A type of mathematical logic named after its designer George Boole. This binary algebraic system is used primarily in switching circuits and database searches. Search engines use logical operators called, Boolean Operators (AND, OR, NOT).
 - AND: Narrows a keyword search by collecting all terms present in the same document.
 - NOT: Prevents retrieval of unwanted documents containing a keyword.
 - OR: which broadens a keyword search by linking related terms.
- **Boot Disk:**
This refers to a diskette that is formatted to actually boot your computer from. They were created as a backup tool in case the normal boot method (hard disk) has failed.
- **Bridge:**
A bridge is a computer networking device used to make a connection and pass along packets of data between two networking computers using the same protocol.
- **Browser:**
A browser is the software used for viewing pages on the web. Two examples are Microsoft Internet Explorer and Netscape Navigator.
- **Buffer:**
A place, especially in RAM, for the temporary storage of data for the purpose of speeding up an operation such as printing or disk access. Data from a buffer is available more quickly than data from where the buffer got it. Typically buffers get data before it is needed so it will be ready quickly when it is needed. Similar to cache.
- **Buffered Memory:**
Using a buffer to isolate the memory from the controller reduces the load on the chipset. This allows for more memory chips to be used.
- **BUS:**
A bus is a grouping of wires that allow the flow of data from one area of the computer to another. It is thought of that a bus represents a highway that the data travels through in the computer system. In personal computing, some refer to a bus as the Internal bus which connects all of the devices to the CPU and memory. Also, you may hear the term expansion bus, which connects the expansion board with the CPU and memory.

All buses are made up of two parts:

- Data Bus
- Address Bus

The [data](#) bus is responsible for the actual [data transfer](#) whereas the address bus will route the data to the proper place.

The size of the bus, which is measured in width is the amount of data that it is able to transmit. For

instance, a 16 bit bus will be able to transfer 16 bits of data and a 32 bit bus can transfer 32 bits a data.

Another thing that all buses have in common is that they all have a clock speed. This clock speed is measured in MHz (megahertz). The faster the clock speed of the bus the faster the application will run. In older [PC's](#) the bus that was used was the ISA bus. These older buses are quickly being replaced by the speedier PCI bus.

Most PC's today require a speedy bus that can [transfer data](#) very rapidly. This is what a "local bus" will do. It is a high-speed information highway that connects [directly](#) to the [processor](#).

Lastly, you may hear the term "bus" used in networking. This refers to cable that connects all of the internal devices on a local area network (LAN) also referred to as the "backbone".

- **Bus Mastering:**

A technique that allows certain advanced bus architectures to delegate control data transfers between the CPU and associated peripheral devices to an add-in board. This gives greater system bus access and higher data transfer rates than conventional systems.

- **Byte:**

A byte is a computer data transfer or data storage measurement. One byte equals 8 bits.

- **Cable Modem:**

A cable modem is a type of Internet connection that is transmitted through a coaxial cable. The benefits of this technology are that you are able to achieve much faster speeds through a cable connection and that most homes are already setup with a cable TV setup, making the Internet connection very simple.

- **Cache:**

A very high speed type of memory that is similar to random access memory (RAM). The difference in RAM and Cache is that the Cache memory is on the server side and the RAM is stored in the computer system. Cache is much faster than RAM but they both serve the same purpose and that is to remember previously accessed information. Most commonly, the Cache memory is to remember the previously visited web page so that the computer itself doesn't have to spend its resources providing the page.

- **Cache RAM:**

Cache (commonly referred to as SRAM) is responsible for storing frequently requested instructions and data. It is a small block of high-speed memory located between the CPU and the main memory. When your computer processor needs data, it will check the Cache first to see if it is there. If the data is not there, it will retrieve it from the slower main memory.

- **CADD (Computer Assisted Design and Drafting):**

A graphics software designed to assist users develop on-screen projects, usually rendering in either 2 or 3 dimensional imagery.

- **Cascade:**

A method of connecting circuits together in series to make the output of one, the input of the next. This kind of end-to-end connectivity is useful in extending the distance of a network.

- **CATV:**

Community **A**ntenna **T**elevision or **C**able **T**V system. Can be all coaxial or HFC (Hybrid Fiber Coax) based.

- **CD-ROM:**

(Compact Disc Read-Only Memory) A durable and low cost circular optical storage device widely used to store large amounts of information on a personal computer.

- **Centronics:**

A 36-pin parallel port interface standard that most printer manufactures conform to.

- **CGA:**

Stands for **C**olor **G**raphics **A**dapter. Introduced by IBM as their first microcomputer color standard. This graphics card allowed a maximum of four colors at a resolution of 320 x 200 or two colors at 640 x 200.

- **CGI:**

The "Common Gateway Interface". CGI provides a gateway for HTML pages to interact with other applications.

- **Channel:**

A channel in computing is a specific bandwidth and frequency combination.

- **Chassis:**
The physical framework of a computer system that houses all of the internal devices, wiring, and power supplies.
- **CICS:**
"Customer Information Control System". A general purpose IBM mainframe-based transaction management system. CICS is one of IBM's most widely used database / data communications subsystems.
- **Client:**
A client is commonly referred to as a program or a process that requests information from other programs or processes. A web browser is a good example of a client. Another example would be an email client such as Outlook Express.
- **Clipboard:**
A temporary data (text and graphics) storage facility used when transferring data to a new location.
- **Clock Speed:**
The clock speed is the frequency which determines how fast devices that are connected to the system bus operate. The speed is measured in millions of cycles per second (MHz or megahertz) and is generated by a quartz crystal on the motherboard which acts as a kind of metronome. Devices that are synchronized with the clock may run faster or slower but their speed is determined by multiplying or dividing a factor by the clock speed.
- **Clone:**
An imitation or copy of the original. Usually refers to building a computer system that is based on and compatible with another computer company's system.
- **Cluster:**
In a Windows environment, Cluster refers to the allocated space within files measured in units. A cluster is part of a group of a logical disk sector. Depending on the disk size, a typical cluster size can range from 1 to 64 sectors.

Cluster can also refer to a group of computers networked together and used as a single unit.
- **Clustering:**
This is a way of connecting two (or more) computers together using clustering hardware so that they share the processing load. If ten computers of equal processing speed are clustered together, you would in a sense have a single computer with ten times the processing capacity. The most common use of this technique is with search engines where it is used to provide speedy search results. A couple of other common uses of clustering can be to increase storage capacities or for networks that require load balancing to increase a networks availability and stability.
- **CMOS:**
Most commonly, CMOS refers to a battery powered chip that resides on the Motherboard and is responsible for retaining certain system information (date, time and some system setup parameters) when the computer system is turned off.
- **CMTS:**
Cable Modem Termination System. Typically, this system is found in a cable companies headend or distribution hub. Its purpose is to provide a high-speed data service to cable subscribers.
- **COBOL:**
Stands for **C**ommon **B**usiness **O**riented **L**anguage. A computer programming language invented during the second generation of computers and designed to meet the needs of business. Although less often used today, it was well-suited for writing programs that process large files and generate reports.
- **Codec:**
 1. Short for Compressor/Decompressor. This technology is used for compressing and decompressing data. Codecs are widely used in both hardware and software. A few examples of codecs are: Cinepak, Indeo and MPEG.
 2. Also stands for Coder/Decoder in the telecommunications field. This is a device that encodes or decodes a signal. A common use for this device would be in telephone companies digital and analog networks. It is used to convert binary signals to analog signals.

3. The transformation of a binary value into a voltage that can be transmitted over a wire.

- **Cold Boot:**

A cold reboot also referred to as a hard boot. This occurs when a computer user must switch the computer system off from the main power switch. This process bypasses the normal shut down procedure of the operating system. A cold boot can also be the result of a power failure but is usually performed by the user as a last resort because of either a system failure or a "hung" state.

- **Collision:**

This is a problem that is a result from two or more device attempting to send a signal along the same channel. The usual result of a collision is a garbled message. All computer networks have in place some sort of mechanism to either prevent collisions altogether or to quickly recover from a collision if they were to occur.

- **COM:**

Stands for **C**omponent **O**bject **M**odule. This is a Microsoft standard created to allow for the communication of computer components (or objects) on the same computer system. This specification is very useful because of its ability to integrate many distributed application services in one package.

- **Command Line:**

Commands you type to run an application. You can type commands at an MS-DOS prompt or in the Run dialog box in the Program Manager of Windows. Interfaces in which you type commands rather than choose them from a menu are often called command line interfaces. MS-DOS has a command line interface while the Macintosh does not.

- **Compiler:**

This is an application that converts a programming language into a machine language program.

- **Compression:**

This refers to the reduction of a file size. This technology is very helpful in saving time and space. Example: When e-mailing a large document, using a compression software to reduce the file size will allow the file to be sent and received much faster.

- **Config.SYS:**

The configuration file for DOS systems. Each time a DOS computer boots up, it reads from the CONFIG.SYS file (if present) and will execute any prewritten commands. A couple of the most common file held within the Config.sys are: BUFFERS= and FILES=. These commands enable the system to specify the buffer size and the number of files that are allowed to open at once. Commands can also be held in the Config.sys that will install device drivers.

- **Constraint:**

A data rule that limits a searches possibilities through preset algorithms. The constraint could include an algorithm that would rule out certain data relationships allowing the search to proceed much more quickly.

- **Contrast Ratio:**

This is a dynamic range measurement method. It measures the contrast ratio as it applies to images and text. Detailed images have a higher contrast ratio.

- **Controller:**

A controller is a device responsible for transferring data from a computer system to peripheral device or in reverse. Each device within a computer system has a dedicated controller. The controllers for a monitor and keyboard are included when you purchase a computer system. If you were to add additional devices, you may be faced with purchasing additional controllers for these new devices. Care must be taken that the proper controller is purchased that can communicate with the systems expansion bus.

- **Conventional Memory:**

In a DOS environment, this would refer to a memory portion that is made available to DOS programs. In a typical DOS system, there is 1MB (megabyte) of address space available. Conventional Memory is allotted 640K of the address space. The other 384K of memory is used by the system and is called "high memory". Any memory beyond the 1MB is expanded memory.

- **CPE:**

This refers to ports or other equipment supplied by the manufacture so that the end user can connect to a network. A typically supplied CPE is either a switch or a router.

- **CPM:**

(Cost Per Thousand)

This is a calculation method involving 1000 advertisement impression displays. The CPM rate of pay is calculated based upon these 1000 impressions. One scenario might be that a person would agree to pay you ten dollars for each time the advertisement displays on your web page or site one thousand times.

- **CPU:**
Central Processing Unit. In a microcomputer, a processor on an IC chip (called a microprocessor) that serves as the heart of the computer. It interprets and carries out instructions, performs numeric computations, and controls the peripherals connected to it. Often the entire system unit is called the CPU.
 - **Critical Mass:**
The scale or volume at which processes become self-perpetuating. In Web publishing, it is said that after achieving a certain amount of material and resources, it will create a self-sustaining chain reaction.
 - **CSS:**
Stands for **Cascading Style Sheets**. This is a language designed to work with HTML documents on the Web. CSS is generally used to provide a specific appearance or style to a web page or site. A common use for CSS could be that it is written to specify the links rollover color in a web sites navigation structure. CSS is becoming much more widely used by webmasters due to the file size benefit of using style sheets.
 - **Cursor:**
A cursor is a blinking indicator designed to mark the place of text where a person may be working within a document.
 - **Cyberspace:**
Author William Gibson in his novel Neuromancer describes a more highly developed form of the Internet and who originally coined the term Cyberspace. The word Cyberspace is currently used to describe the whole range of information resources available through computer networks.
 - **Cyberpunk:**
The term Cyberpunk could be used to describe an individual that hacks their way in to computer system with the intent of stealing or destroying the information in the system. It term was actually originated by a science fiction writer that described a lawless futuristic society dominated by computer technology.
 - **Daemon:**
This refers to a program that is designed to run continuously in the background and is activated by a particular event. Examples of Daemons are: [mail server](#) daemons, web server daemons or printer daemons.
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- **Daisy Chain:**
A hardware configuration in which devices are connected one to another in a series. The SCSI interface , for example, supports a daisy chain of up to 7 devices.
 - **Data:**
This refers to the information that is stored on a computer system.
 - **Database:**
Anything that accepts [data](#) is a database. A pile of newspapers is a database. A computer database has the ability to manipulate that data. It is possible to attach applications to that database to search the contents.
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- **Data Bus:**
Data Buses are used on a systems motherboard and contain a group of parallel conductors also known as circuit traces. Data Buses are used by the CPU to transmit and receive data from all connected devices in a computer system. It is also referred to as the external data bus.
 - **Data Communications:**
The moving or sharing of encoded information between two or more data sources using an electronic medium.
 - **Data Conversion:**
Refers to translating data from one format to another. It is most commonly used to reformat data that is being transferred from one system to another so that the receiving system can interpret the information correctly.
 - **Data mining:**
Sorting through data to identify patterns and establish relationships. Data mining parameters include:

- Association - looking for patterns where one event is connected to another event.
- Sequence or path analysis - looking for patterns where one event leads to another later event.
- Classification - looking for new patterns (May result in a change in the way the data is organized but that's ok).
- Clustering - finding and visually documenting groups of facts not previously known.
- Forecasting - discovering patterns in data that can lead to reasonable predictions about the future.

- **Data Rate:**

A speed measurement that calculates how fast information is moved from one place to another. This is usually measured in bits.

- **Data Striping:**

A method of separating data from one disk drive and distributing it across several hard disks. The benefits of Data Striping are:

- When a processor is capable of reading or writing faster than a single disk drive can accept the information. Data Striping will increase the I/O performance.
- Gives the ability to create larger logical volumes.
- Reduces the possibility of disk drive failure.

- **Daughter Card:**

Often called Daughter Board. It is a printed circuit board that plugs into another circuit board (usually the motherboard). A daughter card is similar to an expansion board, but it accesses the motherboard components (memory and CPU) directly instead of sending data through the slower expansion bus. It is different from other expansion boards in the system due to it often having pins, plugs, sockets or connectors.

- **DDR:**

Stands for "Double Data Rate." A type of advanced SDRAM designed to deliver data at a double rate of speed for a given clock frequency. DDR is used in some of the newer video cards such as Nvidia GeForce.

- **DDS:**

Stands for Direct Digital Signal. It refers to a network that uses digital infrastructure equipment exclusively. This eliminates the need for analog-to-digital converters on a network because all signals are transmitted digitally.

- **DECnet:**

A proprietary set of networking protocols developed by the Digital Equipment Corporation. It was the first peer-to-peer networking architectures to emerge in the 1980's.

- **Decoder:**

A software, hardware or circuit that is designed to translate a coded or scrambled signal in to a readable form. A common use for this is by cable companies that scramble a signal until a subscriber becomes authorized to view the signal. The cable company then decodes the signal in to a viewable form.

- **Decryption:**

This is a process of converting information in to a readable form that has been encrypted by the use of an encryption algorithm. A common use could be that a person would like to protect sensitive data that resides on their computer system, so they would use an encryption software to scramble the information. The same software that scrambles the information would be the only authorized entity to decrypt the information. This software could be made available to any authorized person for decryption purposes at other locations.

- **Dedicated Line:**

This refers to a phone line that is a phone line that is connected for one purpose. Many computer users use a dedicated line specifically for their computer system.

- **Degauss:**

To remove magnetism from a device. The term is usually used in reference to color monitors and other display devices that use a Cathode Ray Tube (CRT). These devices aim electrons onto the display screen by creating magnetic fields inside the CRT. External magnetic forces -- such as the earth's natural magnetism or a magnet placed close to the monitor -- can magnetize the shadow mask, causing distorted images and colors. To remove this external magnetic forces, most monitors automatically degauss the CRT whenever you turn on the monitor.

In addition, many monitors have a manual degauss button that performs a more thorough degaussing of the CRT. You can also use an external degausser that degausses the monitor from the outside. Since it may be impossible to remove the external magnetic force, degaussing works by re-aligning the magnetic fields inside the CRT to compensate for the external magnetism.

- **Delimiter:**
A text character that marks the beginning and/or end of a unit of data or separates different data components. For example, periods are used as delimiters in domain names, hyphens and parentheses are used in phone numbers and social security numbers, and blank spaces and commas are used in written text. In HTML the opening delimiter of an element or tag is the less than symbol, <, and the closing delimiter is greater than symbol, >.
- **Demodulation:**
This is a process used by some phone companies that convert an analog signal in to digital signal for use by computer systems.
- **Desktop:**
Once an operating system finishes loading and you are able to see the graphical background and program icons, this is said to be your "desktop". The electronic desktop is a metaphor for the actual desktop at your home or office in which you will find your many business tools.
- **Desktop Window Manager (DWM):**
This new visual style (Aero Glass) and look in Windows Vista is powered by Windows Vista's Desktop Window Manager. A video card supporting the Longhorn Display Driver Model (LDDM) system is necessary to view Aero Glass.
- **DHCP:**
Dynamic Host Configuration Protocol. This is a process of dynamically allocating IP addresses so that they can be reused. This provides a way of managing IP addresses for all PC's connected to cable modems in a network.
- **DHTML:**
Stands for Dynamic HTML. This term applies to many web design standards such as HTML, JavaScript and CSS where these elements may be intermixed to create more dynamic design elements. By using DHTML, users can have the ability to drag or click preset design features of a web page.
- **Dial-Up Line:**
This is a telephone line that is connected to a server. When it is called, tones are exchanged between the server and the device calling in order to attach.
- **Dial-Up Networking:**
This is a feature that was used by the Windows 95, 98 and Unix operating systems. It allows for the connection of other computer systems over the Internet using a phone line connected to a modem.
- **Digital:**
A system that defines data in a discrete, non-fluctuating (i.e., non-analogue), numerical method. Similar to a binary system.
- **Digital Light Processing (DLP):**
A video projection technology that uses hundreds of thousands of rotating mirrors to project high quality, high definition images. DLP was originally developed by Texas Instruments.
- **DIMM:**
Short for Dual In-line Memory Module. DIMM is a later version of memory than that of its earlier SIMM (Single In-line) counterpart. A DIMM module was introduced for the Pentium processor because the Pentium processor needed a 64 bit path. The SIMM module only has a 32 bit path. Also, SIMM modules are required to be replaced in pair whereas the DIMM modules can be replaced one at a time.
- **DIP:**
Acronym for Dual In-line Package. This is a type of chip that was most popular when memory was directly

installed on the motherboard. It can be identified by its rectangular casing and has two rows of connector pins on both sides.

- **Direct X:**
Developed by Microsoft for its Windows operating systems. This technology was designed to provide a much broader gaming or multimedia [environment](#). In the later versions of DirectX, more attention to 3D graphics have been applied. It works by giving software developers direct access to low-level functions of a PC's peripherals by providing a set of application programming interfaces (APIs).

- **Directory:**
In computing, this refers to the separate entities of a file system. A directory can contain thousands of files and folders used as a means of adding or updating data and is usually an organized searchable reference.
- **Distributed Network:**
A network using multiple locations. This process is very effective when a specific job can be dynamically tackled by each node in the network rather than by using one individual machine's processor.
- **DLL:**
Dynamic Link Library. This refers to a file that contains executable code that can be used by many different programs at the same time. DLLs have great benefits to a system's [storage](#) structure and offer performance benefits as well. Once a program is activated, the DLL file for that program is executed giving the system the proper instruction for that program. If another program uses the same set of instructions, the same DLL will execute the same instructions for that program. Having the DLL files saves the system from storing this information in a dedicated manner which creates a faster load time for the program and saves a lot of space on a system's hard drive. Dynamic link libraries are stored in files with the .DLL file extension.

- **DMA:**
(Direct Memory Access) This is a method of bypassing the central processing unit (CPU) and handling data transfers between the memory and peripheral devices. Systems having DMA channels can transfer data much more quickly than those without.
- **DNS:**
Domain Name Service. This service changes alphabetical domain names into IP (Internet protocol) addresses. While domain names, such as 5StarSupport are very easy to remember, the Internet is made up of IP addresses. Here's how it works; a company or organization settles on a domain name to use. They then purchase the unique name from a DNS server. The organization then purchases a hosting package from an Internet hosting service. The organization can now upload all of their web site information to the host using a special code supplied by the DNS server.
- **DOCSIS:**
Data Over Cable Service Interface Specification. This is a cable modem standard that was developed by CableLabs. It handles the incoming and outgoing data signals between cable TV networks, personal computers or television sets.
- **Dongle:**
A device that attaches to a computer to control access to a particular application. Dongles provide the most effective means of copy protection. Typically, the dongle attaches to a PC's parallel port. On Macintoshes, the dongle sometimes attaches to the ADB port. The dongle passes through all data coming through the port so it does not prevent the port from being used for other purposes. In fact, it's possible to attach several dongles to the same port.
- **DOS:**
Stands for Disc Operating System. This is a command line operating system that was created by Bill Gates while he was working for IBM. The Windows operating systems are designed to run on top of the DOS system. It is more commonly referred to as MS-DOS. The MS stands for Microsoft.
- **Downstream:**
This term refers to any information that is being received by a computer system. If the information is leaving the computer system it is referred to as "upstream".

- **Downstream frequency:**
Refers to the frequency that is used when transmitting information between the CMTS and cable modem.
- **Domain:**
A domain is a computer, web site or network that is connected to the Internet. A typical domain name looks like this: www.5starsupport.com. The "www" prefix signifies that it is connected to the world wide web. The "5starsupport" or body usually indicates the company name and the suffix "com" is the indicates that it is a commercial site.
- **Domain Name:**
This is a unique identifier of an organization attached to the Internet. Domain names are used to make a web site easier to remember rather than trying to remember a series of long numbers known as an IP (Internet Protocol) address.
- **Dot Pitch:**
An image measurement taken from center to center between stripes or phosphor dots on monitor. The smaller the number, the better the image quality. This measurement is taken in millimeters and it is considered that 0.28 mm is the minimum acceptable display quality. The dot pitch of color monitors for personal computers ranges from about 0.15 mm to 0.30 mm. Other terms for dot pitch is phosphor pitch or line pitch.
- **DPI:**
Stands for Dots Per Inch. An image measurement standard that measures an images resolution as it applies to printers. It measures the images pixels in one square inch. The higher the number the better the images resolution or quality. A typical laser jet printers produce a resolution of about 300dpi. Photo quality inkjet printers produce a resolution ranging from 1200 to 2400 dpi.
- **DRAM:**
Dynamic Random Access Memory. This is a common type of random access memory that is used in personal computing. The "dynamic" in its name is due to the fact that this memory needs to be refreshed as opposed to other SRAM that is "static". The DRAM is refreshed by the use of electrical current pulses that pass through all memory cells. DRAM needs to be periodically refreshed to retain the stored data.
- **Drive Bay:**
An allocated space inside a computer case where an internal device such as a; floppy, CD-ROM or DVD-ROM is mounted.
- **Driver:**
A driver is a software program that is the driving force behind a device. Each computer device needs a driver. Many drivers are included with a computers operating system when you purchase it such as; keyboard, monitor and disk drives. In a Windows operating system, the divers file extension is .DRV. In a DOS system, they are .SYS. The driver is written with specific commands for the device it is written for.
- **DSP:**
Digital Signal Processor. DSP is a technology that is commonly used in devices such as sound cards, fax machines, cellular phones, modems, high-capacity hard disk drives and televisions. DSP chips process large amounts of digital information very quickly. Because of its quick processing abilities, this technology continues to grow fast to meet the needs of today's wireless and multimedia markets.
- **DTP:**
Desk Top Publisher (ing) - A PC Term that describes a program that enables you to design, create and print a variety of projects such as letterheads, birthday cards, calendars, business cards, invitations etc. that would have previously only been possible by using the services of an outside printers business.
- **Dual Core:**
This refers to a new Central Processing Unit (CPU) structure. The difference between a single core and dual core is that a dual core system has two CPU's that are electronically wired together. These two CPU's wired together in parallel gives twice the performance than that of its single core counterpart.
- **Dumb Terminal:**
This refers to a monitor a keyboard setup that can receive, enter, transmit and display information from a server.

But it cannot process any information. Most commonly, these terminals were used to communicate with another computer over a network. Dumb terminals are a thing of the past due to today's availability of cheap computers.

- **Duplex:**
This refers to a communication channel that has the ability to transmit in both directions. This is widely used in printing as you can print on both sides of the paper at once. Sometimes referred to as Full Duplex.
 - **DVD:**
Digital Versatile Disc or Digital Video Disc. This popular technology was first introduced in 1996. Its ability to store large amounts of information reliably made this a very common optical disc [storage technology](#). It can hold between 4 to 28 times more data than that of the CD. A single sided DVD can store 4.7 GB (gigabytes) of information and 8.5 GB on dual-layered discs. Double sided DVDs can handle 9.4 GB on a single layered disc and 17 GB on a dual layered disc.
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- **Dynamic Programming Language:**
This dynamic programming language has the ability to change the program structure as it runs.
 - **Dynamic URL:**
A Web site that is database driven can produce dynamic URLs. Or a URL of a Web site that is produced by running a script can be considered to be a dynamic URL. For instance, if you visit a Web page that displays a message that states: "This page has moved, you will be automatically be taken to the new page". The Webmaster has written a script in to the old Web page that gives the ability to dynamically redirect you to the new page.
 - **E3:**
Similar to the North America T3 high speed digital transmission, the E3 European counterpart is capable of transmitting [data](#) at 34.368 Mbps.
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- **EBCDIC:**
Extended Binary Coded Decimal Interchange Code. It is also called the Extended ASCII Code. This is a common asynchronous code used by IBM. It is pronounced "ehb-suh-dik". Many corporation that have legacy applications and databases in IBM's OS/390 operating system use this code for the text files. The 8 bit character code is used to represent 256 different bit patterns.
 - **ECC Memory:**
Error Checking and Correction. A method of detecting and correcting system memory errors by adding additional bits and using a special algorithm.
 - **EDM (Electronic Document Management):**
Using specific document management software, users can capture and retrieve documents in image, audio, video and text forms.
 - **EDO Memory:**
Short for Extended Data Output, a type of dynamic random access memory. EDO memory is much faster than DRAM because it can access more than one block of information at a time. EDO memory accesses a block of memory and as it is sending the information from one block it starts accessing another block to fetch information.
 - **EEPROM:**
Electrical Erasable Programmable Read Only Memory. This type of memory can be reprogrammed and erased electronically repeatedly by using a device programmer which provides an electric surge. This memory is similar to DRAM, however not as fast, but EEPROM will retain its data even in the event of a power loss. Because of its similarities to flash memory, EEPROM is sometimes referred to as "Flash EEPROM". The difference between flash memory and EEPROM is that EEPROM erases and rewrite data one byte at a time whereas flash memory has the ability to erase and rewrite in blocks. Therefore flash memory is much faster.
 - **EIDE:**
Enhanced Integrated Development [Environment](#). This an enhanced version of the IDE hardware technology but is much faster. It allows for more memory, can access larger hard drives and can support up to four other IDE devices.
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- **E-Mail:**
Stands for Electronic [Mail](#). This is a system of relaying messages across the Internet, from one Internet user to another.
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- **Embed:**
When adding an element from one document to another document. Example: A sound file is created in one document, then it is embedded in an HTML document for publication to the Web.
 - **Emulation:**
This term refers to a program or device that has the ability to imitate another. A common example would be that many printer manufactures software emulate the Hewlett-Packard Laser Jet software because of the fact that so many of these printers exist. Emulation does not exist only for software. Hardware can be emulated as well.
 - **Encryption:**
Encryption is the process of converting data into "unreadable code" is so that unauthorized people cannot understand the content. Encryption may be used to make stored data private (e.g., data that is stored on a potentially vulnerable hard disk), or to allow a nonsecure communications channel to serve as a private communications channel. Encryption is sometimes described as the process of converting plaintext into ciphertext. To decipher the message, the receiver of the encrypted data must have the proper decryption key.
 - **Engine: (as in "Search Engine"):**
This is the working part of a database or application.
 - **Enhanced IDE:**
This is an enhanced version of the ATA-2 standard for managing the interface between secondary [storage devices](#) and a computer system.
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- **Environment:**
The interaction of all things external to a physical platform. This could be made up of software, hardware or networking procedures that communicate with the system to provide a particular service.
 - **EPROM:**
Erasable Programmable Read-Only Memory. It is pronounced "ee-prom". This type of memory is designed to hold information until exposed to ultraviolet light in which case the information or memory is erased. Once exposed to this ultraviolet light, the EPROM can then be reprogrammed. A PROM burner or PROM programmer is used for the rewriting task. The difference between EPROM and its PROM counterpart is that the EPROM can be rewritten and PROM cannot. This makes it possible for the manufacture to change the contents of the EPROM to a newer or bug-free version prior to the computer being shipped.
 - **Error Rate:**
In many cases, it may be acceptable if an input device generates a certain number of errors. This is often referred to as the error rate and the acceptable level will vary according to the input device being used and the business application. Optical character recognition, for example, is generally considered a comparatively unreliable means of entering data. At present, a typical OCR software package will have an error rate of between five and ten per cent.
 - **ESD:**
Stands for Electro Static Discharge and is defined as a sudden flow of electricity between two objects at different electrical potentials. ESD is a primary cause of integrated circuit damage or failure.
 - **ESD Testing:**
Electro Static Discharge testing is one kind of test that hardware usually has to pass to prove it is suitable for sale and use. The hardware must still work after it has been subjected to some level of electrostatic discharge. Some organizations have their own ESD requirements which hardware must meet before it will be considered for purchase.
Different countries have different legal regulations about levels of ESD.
 - **How to help prevent ESD:**
The best way to help prevent ESD is either to use a wrist strap, or a grounding mat. However most users do not have access to such items therefore you can follow the below guidelines to help prevent ESD as much as

possible.

- Clothes - Insure what you are not wearing an item that conducts a lot of Electrical Charge, such as a wool sweater. Also it is generally a good idea to remove all jewelry as well.
- Weather - When working on your computer insure there is not an electrical storm outside which increases the potential of ESD.
- Cords - Insure everything is removed from the back of the computer (power cord, mouse, keyboard, etc).
- Zero Potential - Insure you and the computer are at Zero Potential by continuously touching the unpainted metal chassis (computer frame) or the [Power supply](#).
- Standing - When working inside the computer it is highly recommended that you stand at ALL times.
- Surface - It is always best to stand on a wooden surface. Avoid working on a computer in carpeted areas.

- **Ethernet:**

A networking system that enables high speed data communication over coaxial cables. The Ethernet network system supports TCP/IP, AppleTalk, Novell Netware, and other network protocols. An Ethernet (LAN) connection is 10 Mbit/s or 100 Mbit/s, and is used to connect many computers that can all "talk" directly to each other. Normally they will all talk with a few [servers](#) and printers, but the network is all-to-all. The distance is normally limited to below 1 km.

- **Executable File:**

An executable file or has a file extension of .EXE. It is a type of binary file designed to be directly executed by a computer system. Unlike source files, an executable file cannot be read by humans. They are specifically designed to be interpreted as a program.

- **Expanded Memory:**

Another term for Expanded Memory is EMS (Expanded Memory Specification). In a DOS based system there is 1 MB (megabyte) of address space available for main memory. 384K is for high-memory and 640K is for the conventional memory. To expand the memory capabilities, this technique is applied to the DOS system.

- **Expansion Bus:**

A group of control lines that provide a buffered interface to devices located either on the system board or on cards that are plugged into expansion connectors. Common expansion buses included on the system board are USB, PC Card, and PCI.

- **Expansion Card:**

This is a circuit card that is attached to the motherboards expansion slot. By using an expansion card, you can increase a systems functionality by providing the access to additional devices or features.

- **Extended Memory:**

This memory expands upon a DOS systems existing conventional memory.

- **External Modem:**

A modem that is separate from the actual computer system and is self-contained in its own box. Because of the additional expense of creating the housing for the external modem, they tend to be a little more expensive than their internal modem counterpart. An external modem can be easily moved from one computer to the next because it is not attached directly to the printed circuit board as the internal modem is.

- **Extranet:**

An extranet is similar to an intranet. They both use Internet protocols. The difference is that the extranet is designed to give a certain amount of access to outside users where an intranet is securely set behind a firewall and intended to be viewed by company employees or members of an organization only. An extranet can be controlled to provide various levels of accessibility to outside users and to what parts of the extranet they are authorized to view. See Also: Intranet

- **FAT:**

Stands for File Allocation Table. Basically this is a table of contents in a directory that tells the computer what all is in there. Look at your Netscape cache, you'll see a FAT. It'll be the first file.

- **FAT 16:**

This was an older FAT (File Allocation Table) that was designed for use in the MS-DOS system. FAT 16 was used in many Windows Operating Systems up to Windows ME. Its biggest downfall was that it could only handle small partition sizes.
- **FAT 32:**

A new version of the file allocation table (FAT) available in Windows 95 OSR 2 and Windows 98. FAT32 increases the number of bits used to address clusters and also reduces the size of each cluster. The result is that it can support larger disks (up to 2 terabytes) and better [storage](#) efficiency (less slack space).
- **Fault Tolerance:**

The ability of a system to respond gracefully to an unexpected hardware or software failure. There are many levels of fault tolerance, the lowest being the ability to continue operation in the event of a power failure. Many fault-tolerant [computer systems](#) mirror all operations -- that is, every operation is performed on two or more duplicate systems, so if one fails the other can take over.

- **FAQ:**

Stands for Frequently Asked Questions. An FAQ is a file or document where a moderator or administrator will post commonly asked questions and their answers.
- **Fax Modem:**

A device you can attach to a [personal computer](#) that enables you to transmit and receive electronic documents as faxes. A fax modem is like a regular modem except that it is designed to transmit documents to a fax machine or to another fax modem. Some, but not all, fax modems do double duty as regular modems. As with regular modems, fax modems can be either internal or external. Internal fax modems are often called fax boards.
- **FDDI:**

Fiber Distributed [Data](#) Interface -- A standard for transmitting data on optical fiber cables at a rate of around 100,000,000 bits-per-second (10 times as fast as Ethernet, about twice as fast as T-3).

- **FDISK:**

A program found in all Aptiva software loads that allows modification of the partitions and/or logical drives on the hard drive. It can Display, Delete and Create partitions and logical drives, defining them for DOS, OS/2 or Windows, depending on which version of FDISK is used and how it is used. Type FDISK and hit Enter to start the program. This is a DESTRUCTIVE command and incorrect use will result in data loss!
- **Fetch:**

The process of 'fetching' a data or instruction item from memory and writing it to a register. The 'fetched' item is then either executed (instruction), or acted upon (data).
- **Fiber Optic:**

An alternative to copper wire for transmitting information. In fiber optics, pulses of light representing binary data are flashed along a flexible glass fiber. The advantage over copper wiring is that a single strand of optical fiber can carry thousands and thousands of different frequencies at once without data loss.
- **File Sharing:**

This is the most important feature of the Internet. This is a method of allowing one [server](#) to give the same file to many different end users.
- **File Server:**

A computer or a file [storage device](#) on a network that allows other computers on the same network access to stored information and resources.

- **Firmware:**

Software (programs or data) that has been written onto read-only memory (ROM). Firmware is a combination of software and hardware. ROMs, PROMs and EPROMs that have data or programs recorded on them are firmware.

- **Flash Memory:**
This type of non-volatile memory has the ability to retain its information even when there is no power source. Flash Memory is best known for its use in hand help devices where it is used to store the operating system and core applications. Other devices that use Flash Memory are:
 - Digital Cameras
 - Audio Players
 - Cell Phones and Pagers
 - USB Drives
 - Printers
- **Flow Chart:**
A graphical representation of planned activities, operations or tasks. Usually, flow charts are used to show the progress of a certain activity. They can also be used to show the variance between specific operations.
- **Formal Specification:**
These specifications exist to satisfy predefined properties of a device or program. The word "formal" in Computer Science is referring to the act of being "precise". It takes three language components to make a specification "formal":
 1. Syntax:
Grammatical structuring of data using a special code that defines how this special code is used to form words, phrases or any other allowable constraint.
 2. Semantics:
A relationship between words, phrases or any other allowable constraint and their actual meaning. This is contrast to "Syntax". An example could be; if you enter a misspelled command, it would be a syntax error, but if you enter what may be a legitimate command but is not understood in its current context, this would be a "semantics error".
 3. Proof Theory:
This deals with the actual "logic" of the programming. Using mathematical analysis techniques, the programming language is proof checked.
- **Forms:**
A web page element that uses text fields, radio buttons and check boxes to process predefined data. Forms also allow users to interact with an application by allowing information to be passed dynamically between two points.
- **FORTRAN:**
FORmula TRANslator. Developed in 1954 by IBM, it is a high-level programming language, most widely used for scientific and engineering applications because it has excellent mathematical functions. Many programmers consider it to sacrifice "elegance" for speed of numerical manipulations.
- **Freeware:**
This is a shortened version of Free Software. Programmers offer their work without wanting pay in return.
- **Front Side Bus:**
This is the main pathway for data transfer in a PC. It connects all of a computers major components, such as; memory, AGP socket and chipset.
- **FTP:**
Stands for File Transfer Protocol.
- **Full Duplex:**
Refers to the transmission of data in two directions simultaneously. For example, a telephone is a full-duplex device because both parties can talk at once. In contrast, a walkie-talkie is a half-duplex device because only one party can transmit at a time.

Most modems have a switch that lets you choose between full-duplex and half-duplex modes. The choice depends on which communications program you are running.

In full-duplex mode, data you transmit does not appear on your screen until it has been received and sent back

by the other party. This enables you to validate that the data has been accurately transmitted. If your display screen shows two of each character, it probably means that your modem is set to half-duplex mode when it should be in full-duplex mode.

- **Gateway:**

As in Common Gateway Interface (CGI). It is a piece of software that allows two items to communicate with each other. They are used to make connections between [computers](#) and systems inside that computer.

- **General Protection Fault:**

GPF, short for General Protection Fault, is a computer condition that causes a Windows application to crash. The most common cause of a GPF is two applications trying to use the same block of memory, or more specifically, one application trying to use memory assigned to another application.

The following situations can also cause GPFs:

Running an application with insufficient resources

Using improper [hardware](#) device drivers

Corrupted or missing Windows files

Applications exchanging [data](#) that cannot be read

GPFs are often preceded by an invalid page fault.

- **GIF:**

Pronounced "jif." Stands for Graphical Interchange Format. It is an image format created by CompuServe.

- **Gigabyte:**

2 to the 30th power (1,073,741,824) bytes. One gigabyte is equal to 1,024 megabytes. Gigabyte is often abbreviated as G or GB.

- **GIGO:**

It's an acronym that stands for Garbage In, Garbage Out.

- **Glyph:**

A graphic symbol whose appearance conveys information; for example, the vertical and horizontal arrows on cursor keys that indicate the directions in which they control cursor movement.

- **Gopher:**

A method of distributing information by computers that has waned in popularity to ftp. Most gopher files contain only text information with few images, audio, or video components. Files can be downloaded with a similar protocol like ftp.

- **GUI - Graphical User Interface:**

A program interface that takes advantage of the computer's [graphics](#) capabilities to make the program easier to use. Well-designed graphical user interfaces can free the user from learning complex command languages. On the other hand, many users find that they work more effectively with a command-driven interface, especially if they already know the command language.

- **Half-Duplex:**

Refers to the transmission of [data](#) in just one direction at a time. For example, a walkie-talkie is a half-duplex device because only one party can talk at a time. In contrast, a telephone is a full-duplex device because both parties can talk simultaneously.

Most modems contain a switch that lets you select between half-duplex and full-duplex modes. The correct choice depends on which program you are using to transmit data through the modem.

In half-duplex mode, each character transmitted is immediately displayed on your screen. (For this reason, it is sometimes called local echo -- characters are echoed by the local device). In full-duplex mode, transmitted data is not displayed on your monitor until it has been received and returned (remotely echoed) by the other device. If you are running a communications program and every character appears twice, it probably means that your modem is in half-duplex mode when it should be in full-duplex mode, and every character is being both locally and remotely echoed.

- **Handshaking:**

The process by which two devices initiate communications. Handshaking begins when one device sends a message to another device indicating that it wants to establish a communications channel. The two devices then send several messages back and forth that enable them to agree on a communications protocol.

- **Hard Boot:**

A hard reboot (also known as a cold reboot) is when power to a computer is cycled (turned on and off) or a special reset signal to the processor is triggered (from a front panel switch of some sort). This restarts the computer without first performing the usual shut-down procedure. (With many operating systems, especially those with disc caches, after a hard reboot the system may well be in an "unclean" state, and require that checks and repairs to on-disc filesystem structures be performed before normal operation can begin.) It may be caused by power failure, be done by accident, or be done deliberately as a last resort because nothing else to retrieve the system from a "hung" state works.

- **Hardware:**

These are the physical items including your computer and floppy discs.

- **Hayes Compatible:**

Hayes Microcomputer Products is one of the leading manufacturers of modems and has developed a language called the AT command set for controlling modems that has become the de facto standard. Any modem that recognizes Hayes modem commands is said to be Hayes-compatible.

This is very useful because most communications programs use Hayes modem commands. Virtually all modems manufactured today are Hayes-compatible.

- **Headend:**

Central distribution point for a CATV system. Video signals are received here from satellites and maybe other sources, frequency converted to the appropriate channels, combined with locally originated signals, and rebroadcast onto the HFC plant. The headend is where the CMTS is normally located.

- **Heat Sink:**

A component designed to lower the temperature of an electronic device by dissipating heat into the surrounding air. All modern CPUs require a heat sink. Some also require a fan. A heat sink without a fan is called a passive heat sink; a heat sink with a fan is called an active heat sink. Heat sinks are generally made of a zinc alloy and often have fins.

- **Helper Application:**

This is an application your browser uses to manipulate a downloaded program.

- **HFC:**

Hybrid fiber-coaxial (cable network). Older CATV systems were provisioned using only coaxial cable. Modern systems use fiber transport from the headend to an optical node located in the neighborhood to reduce system noise. Coaxial cable runs from the node to the subscriber. The fiber plant is generally a star configuration with all optical node fibers terminating at a headend. The coaxial cable part of the system is generally a trunk-and-branch configuration.

- **High Memory Area:**

In DOS -based systems, the high memory area refers to the first 64K of extended memory.

- **HST:**

High Speed Technology- Before the invention of the CCITT V.32 modem standards for 9600 BPS modems, US Robotics invented a proprietary protocol that runs even faster at 14,400 BPS. It became popular on US bulletin board system, but never caught on outside the USA. It is gradually being replaced by V.32.

- **Host:**

A computer on a network that provides services to other [computers](#) on the network. Unless you have your own [server](#), you need a hosting company who provides a server or computer that is connected to the internet and makes your web pages available to the rest of the internet.

- **Hot Fix:**

Novell, Inc.'s term for the feature of their network file [server operating system](#), Novell NetWare, which handles

errors in disk write operations. The OS re-reads every block it writes to disk while it holds the data to be written in memory. In the case of an error, the data block is written to a spare area on the disk.

The feature lost much of its importance with the widespread use of hard disk drives with built-in error correction and bad block re-mapping.

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- **Hotlist:**
List of URLs saved within the Mosaic Web browser. (Bookmark in Netscape.)
 - **Hot Swappable:**
This refers to a device that is designed to be removed or replaced while a system is turned on without disturbing the computers function. A good example of a hot swappable device is the USB flash drive.
 - **HTML:**
Hyper Text Markup Language. It is a collection of structuring and formatting tags used to create Web pages.
 - **HTTP:**
Stands for HyperText Transport Protocol. Common protocol used to communicate between World Wide Web [Servers](#).

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- **Hub:**
A common connection point for devices in a network. Hubs are commonly used to connect segments of a LAN. A hub contains multiple ports. When a packet arrives at one port, it is copied to the other ports so that all segments of the LAN can see all packets.

A passive hub serves simply as a conduit for the data, enabling it to go from one device (or segment) to another. So-called intelligent hubs include additional features that enables an administrator to monitor the traffic passing through the hub and to configure each port in the hub. Intelligent hubs are also called manageable hubs.

A third type of hub, called a switching hub, actually reads the destination address of each packet and then forwards the packet to the correct port.

- **Hybrid:**
A device or system combining two types of mechanisms, circuits, or design approaches, each of which could of itself accomplish the total function but in a different and usually less effective manner. A hybrid computer combines digital and analog computers into one functioning system.
- **Hypertext:**
This is a mark-up language that allows for non-linear transfers of data. The method allows your computer to provide the computational power rather than attaching to a mainframe and waiting for it to do the work for you.
- **Hyper-Threading:**
(HTT = Hyper Threading Technology) is Intel's trademark for their implementation of the simultaneous multithreading technology on the Pentium 4 microarchitecture. It is basically a more advanced form of Super-threading that first debuted on the [Intel Xeon processors](#) and later added to Pentium 4 processors.

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- **IBM:**
Stands for International Business Machines
 - **ICMP:**
(Internet Control Message Protocol) A message control and error-reporting protocol between a host [server](#) and a gateway to the Internet. ICMP uses Internet Protocol (IP) datagrams, but the messages are processed by the IP software and are not directly apparent to the application user.

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- **Icon:**
A small video display that acts as an activation link when clicked on.
 - **IDE:**
(Integrated Development [Environment](#)) A programming environment integrated into an application. For example, Microsoft Office applications support various versions of the BASIC programming language. You can develop a
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- **IIS (Internet Information Server):**

A Web server that runs on the Windows NT/2000 platforms. It allows the creation of web-based applications. IIS provides both FTP server and web server capability.

- **Image Map:**

Typically, an image map is graphical representation (also known as "hot spots") containing predefined clickable hyperlinks. A good example of an image map would be a map containing clickable outlined images of each city. Once the user clicks the image, they are taken to a separate web page containing information regarding that particular city.

- **IMAP:**

Internet Message Access Protocol

IMAP is gradually replacing POP as the main protocol used by [email](#) clients in communicating with [email servers](#).

Using IMAP, an email client program can not only retrieve email but can also manipulate messages stored on the server without having to actually retrieve the messages. So messages can be deleted, have their status changed, multiple mail boxes can be managed, etc.

- **Infrared:**

A light that is so red that it is not viewable to the naked eye. It uses this invisible beam of light to transmit a pre-programmed 'line-of-sight' signal to certain electronic components. Its typical use involves wireless devices such as a TV remote controller.

- **Instruction Set:**

The set of instructions that the microprocessor can execute.

- **Integrated Circuit:**

Another name for a chip, an IC is a small electronic device made out of a semiconductor material.

- **Interface:**

This is any type of point where two different things come together. Most often, the term is used to describe the programs between you and your computer like Windows, OS/2 and others. What you see on the screen is the interface between you and what your computer is doing.

- **Interlacing:**

A display technique that enables a monitor to provide more resolution inexpensively. With interlacing monitors, the electron guns draw only half the horizontal lines with each pass (for example, all odd lines on one pass and all even lines on the next pass). Because an interlacing monitor refreshes only half the lines at one time, it can display twice as many lines per refresh cycle, giving it greater resolution. Another way of looking at it is that interlacing provides the same resolution as non-interlacing, but less expensively.

- **Interleaving:**

A recording method that reduces [data](#) errors during playback. Instead of the file being written in a contiguous data stream, the data sectors are intermixed along the recording track. If a disc should have a smudge or scratch, the entire data file is generally recoverable because a smaller amount of the file data is affected.

- **Internal Modem:**

A modem that resides on an expansion board that plugs into a computer. In contrast, an external modem is a box that attaches to a computer's COM port via cables.

- **Internet:**

The Internet is a super-network. It connects many smaller networks together and allows all the [computers](#) to exchange information with each other. To accomplish this all the computers on the Internet have to use a common set of rules for communication. Those rules are called protocols, and the Internet uses a set of protocols called TCP/IP (Transmission Control Protocol/Internet Protocol). Many people equate the World Wide Web with the Internet. In fact, the Internet is like the highway, and the World Wide Web is like a truck that uses that highway to get from place to place.

- **Interrupt:**

A signal informing a program that an event has occurred. When a program receives an interrupt signal, it takes a specified action (which can be to ignore the signal). Interrupt signals can cause a program to suspend itself temporarily to service the interrupt.

Interrupt signals can come from a variety of sources. For example, every keystroke generates an interrupt signal. Interrupts can also be generated by other devices, such as a printer, to indicate that some event has occurred. These are called hardware interrupts. Interrupt signals initiated by programs are called software interrupts. A software interrupt is also called a trap or an exception.

PCs support 256 types of software interrupts and 15 hardware interrupts. Each type of software interrupt is associated with an interrupt handler -- a routine key on your keyboard, this triggers a specific interrupt handler. The complete list of interrupts and associated interrupt handlers is stored in a table called the interrupt vector table, which resides in the first 1 K of addressable memory.

- **Intranet:**

A private network for communications and sharing of information that, like the Internet, is based on TCP/IP but is accessible only to authorized users within an organization. An organization's intranet is usually protected from external access by a firewall. See also: Extranet.

- **IPsec:**

Stands for Internet Protocol Security. A set of protocols developed by IETF (Internet Engineering Task Force) and designed to provide protection of sensitive data over unprotected public networks, such as the Internet.

- **IPX:**

Short for Internetwork Packet Exchange, a networking protocol used by the Novell NetWare operating systems. Like UDP/IP, IPX is a datagram protocol used for connectionless communications. Higher-level protocols, such as SPX and NCP, are used for additional error recovery services. The successor to IPX is the NetWare Link Services Protocol (NLSP).

- **IS:**

Stands for Information System.

- **ISA:**

The bus architecture used in the IBM PC/XT and PC/AT. It's often abbreviated as ISA (pronounced as separate letters or as eye-sa) bus. The AT version of the bus is called the AT bus and became a de facto industry standard. Starting in the early 90s, ISA began to be replaced by the PCI local bus architecture. Most computers made today include both an AT bus for slower devices and a PCI bus for devices that need better bus performance.

In 1993, Intel and Microsoft introduced a new version of the ISA specification called Plug and Play ISA. Plug and Play ISA enables the operating system to configure expansion boards automatically so that users do not need to fiddle with DIP switches and jumpers.

- **ISDN:**

Integrated Services Digital Network. ISDN is a public global network capable of transmitting voice, data and images at speeds up to 2 Mbit/s. The digital technique can transport more signals on the same telephone line than the traditional analogue technique and enables a range of new services.

- **ISO:**

Stands for the International Standards Organization. Someone has to say what is the standard for transferring data. These people are it. You'll find them in Paris.

- **ISP:**

Internet Service Provider, a company that provides access to the Internet. For a monthly fee, the service provider gives you a software package, username, password and access phone number. Equipped with a modem, you can then log on to the Internet and browse the World Wide Web and USENET, and send and receive e-mail.

In addition to serving individuals, ISPs also serve large companies, providing a direct connection from the company's networks to the Internet. ISPs themselves are connected to one another through Network Access Points (NAPs). ISPs are also called IAPs (Internet Access Providers).

- **ISDN:**
Integrated Services Digital Network.
Basically a way to move more data over regular existing phone lines. ISDN is available to much of the USA and in most markets it is priced very comparably to standard analog phone circuits. It can provide speeds of roughly 128,000 bits-per-second over regular phone lines. In practice, most people will be limited to 56,000 or 64,000 bits-per-second.
Unlike DSL, ISDN can be used to connect to many different locations, one at a time, just like a regular telephone call, as long the other location also has ISDN.
- **Italics:**
A type style with slightly slanted characters, used for emphasis. Best used to set off quotes, special phrases, and foreign words, italic letters have a redesigned structure that allows them to slant to the right. The first italic type was designed by Aldus Manutius in AD 1501 and was based on the handwriting style of that time. Furthermore, lowercase letters were in italics while capital letters were Roman (or vertical stance).
- **JAVA:**
A high-level programming language developed by [Sun Microsystems](#). Java was originally called OAK, and was designed for handheld devices and set-top boxes. Oak was unsuccessful so in 1995 Sun changed the name to Java and modified the language to take advantage of the burgeoning World Wide Web.

Java is an object-oriented language similar to C++, but simplified to eliminate language features that cause common programming errors. Java source code files (files with a .java extension) are compiled into a format called bytecode (files with a .class extension), which can then be executed by a Java interpreter. Compiled Java code can run on most [computers](#) because Java interpreters and runtime [environments](#), known as Java Virtual Machines (VMs), exist for most operating systems, including UNIX, the Macintosh OS, and Windows. Bytecode can also be converted directly into machine language instructions by a just-in-time compiler (JIT).

Java is a general purpose programming language with a number of features that make the language well suited for use on the World Wide Web. Small Java applications are called Java applets and can be downloaded from a Web [server](#) and run on your computer by a Java-compatible Web browser, such as Netscape Navigator or Microsoft Internet Explorer.

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- **JavaScript:**
This is a language very close to Java that allows for more interaction with the viewer. It is much more forgiving than Java as doesn't require it's own window in which to work.
 - **JPEG:**
Pronounced "J-Peg." Stands for Joint Photographic Experts Group. It's an image format that allows for compression when stored.
 - **Jumpers:**
A metal bridge that closes an electrical circuit. Typically, a jumper consists of a plastic plug that fits over a pair of protruding pins. Jumpers are sometimes used to configure expansion boards. By placing a jumper plug over a different set of pins, you can change a board's parameters.
 - **JIT (Just-In-Time):**
This is a type of Java compiler that interprets a class file, then compiles the information into native code.
 - **K56Flex:**
A technology developed by Lucent Technologies and Rockwell International for delivering data rates up to 56 Kbps over plain old telephone service (POTS). It was long believed that the maximum data transmission rate over copper telephone wires was 33.6 Kbps, but K56flex achieves higher rates by taking advantage of the fact that most phone switching stations are connected by high-speed digital lines. K56flex bypasses the normal digital-to-analog conversion and sends the digital data over the telephone wires directly to your modem where it is decoded.

Lucent and Rockwell have announced that future K56flex modems will conform to the new V.90 standard approved by the ITU. And users with older K56flex modems may upgrade their modems to support V.90.

While K56flex offers faster Internet access than normal modems, there are several caveats to using an K56flex modem:

-The high speeds are available only with downstream traffic (e.g., data sent to your computer). Upstream traffic

is delivered using normal techniques, with a maximum speed of 33.6 Kbps.

-To connect to the Internet at K56flex speeds, your Internet Service Provider (ISP) must have a modem at the other end that supports V.90.

-Even if your ISP supports V.90, you might not achieve maximum transmission rates due to noisy lines.

- **Kbit/s:**
Stands for thousands of bits per second.
- **Kerberos:**
The name 'Kerberos' was derived from Greek mythology which refers to the three-headed dog that guarded the gates of Hades. Kerberos is most widely used in a network to provide secure network authentication. Usually to authenticate users of the network.
- **Kernel:**
The central module of an operating system. It is the part of the operating system that loads first, and it remains in main memory. Because it stays in memory, it is important for the kernel to be as small as possible while still providing all the essential services required by other parts of the operating system and applications. Typically, the kernel is responsible for memory management, process and task management, and disk management.
- **Keygen:**
(Key Generator). Refers to a program that will automatically generate a registration or serial number. Its usual purpose is to eliminate software piracy.
- **Kilobyte: (KB)**
This is about a thousand bytes of space. In reality, it's two to the 10th power or 1,024 bytes.
- **KVM:**
Keyboard-Video-Mouse switch. A piece of hardware that connects two or more computers to a single keyboard, monitor and mouse. Imagine you have a row of 4 computers that all serve as file servers. Why waste money buying 4 monitors, 4 keyboards and 4 mice. With a KVM switch you can connect all 4 computers to one monitor, keyboard and mouse and to switch between them when needed.
- **LAN:**
A computer network that spans a relatively small area. Most LANs are confined to a single building or group of buildings. However, one LAN can be connected to other LANs over any distance via telephone lines and radio waves. A system of LANs connected in this way is called a wide area network (WAN).

Most LANs connect workstations and personal [computers](#). Each node (individual computer) in a LAN has its own CPU with which it executes programs, but it is also able to access data and devices anywhere on the LAN. This means that many users can share expensive devices, such as laser printers, as well as data. Users can also use the LAN to communicate with each other, by sending [e-mail](#) or engaging in chat sessions.

There are many different types of LANs Ethernets being the most common for PCs. Most Apple Macintosh networks are based on Apple's AppleTalk network system, which is built into Macintosh computers.

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- **Layer:**
In networking, layers (also called Levels) refer to software protocols. Each layer builds on the layer beneath it as part of an overall interactive transmission system.
 - **LBA:**
Known as: Logical Block Addressing. In a system using an enhanced BIOS and [Operating System](#) that supports the use of LBA, it would then be possible for the computer to use a larger hard drive. LBA allows for use of a unique sector number in each sector instead of referring to a cylinder, head and sector number configuration.
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- **LCD:**
Abbreviation of liquid crystal display, a type of display used in digital watches and many portable computers. LCD displays utilize two sheets of polarizing material with a liquid crystal solution between them. An electric current passed through the liquid causes the crystals to align so that light cannot pass through them. Each crystal, therefore, is like a shutter, either allowing light to pass through or blocking the light.

Monochrome LCD images usually appear as blue or dark gray images on top of a grayish-white background. Color LCD displays use two basic techniques for producing color: Passive matrix is the less expensive of the two technologies. The other technology, called thin film transistor (TFT) or active-matrix, produces color images that are as sharp as traditional CRT displays, but the technology is expensive. Recent passive-matrix displays

using new CSTN and DSTN technologies produce sharp colors rivaling active-matrix displays.

- **LED:**
Abbreviation of light emitting diode, an electronic device that lights up when electricity is passed through it. LEDs are usually red. They are good for displaying images because they can be relatively small, and they do not burn out. However, they require more power than LCDs.
 - **LimeWire:**
A peer-to-peer Gnutella file sharing client which allows network users share files. LimeWire is a free open source software.
 - **Linker:**
A program specifically designed to combine or link together a large number of programs forming a single executable instruction set for these programs that can be loaded in to the systems memory for quick execution.
 - **Linux:**
A version of UNIX that runs on a variety of [hardware platforms](#) including x86 PCs, Alpha, PowerPC and IBM's product line. Linux is open source software, which is freely available; however, the full distribution of Linux along with technical support and training are available for a fee from vendors such as Red Hat Software and Caldera. Due to its stability, Linux has gained popularity with Internet Service Providers as the Operating System of choice for hosting Web [servers](#).
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- **Live Script:**
This is the former name of Java Script. There are few updates between the two.
 - **LLTD (Link Layer Topology Discovery):**
A feature that helps users to troubleshoot their networks. LLTD automatically detects multiple network devices and gives a graphical presentation of the connected hardware to identify configuration errors.
 - **Logic:**
This is broken down into two categories:

-Software Logic:
The sequence of instructions performed by a program.
-Hardware Logic:
A set of circuit elements that perform a function.
 - **Login:**
To attach to a computer. It has also come to represent your User ID command.
 - **Login Script:**
This is the small text file that is run by the [server](#) gateway to make the attachment between it and your computer.
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- **Loopback:**
A diagnostic test that returns the transmitted signal back to the sending device after it has passed through a network or across a particular link. The returned signal can then be compared to the transmitted one. The discrepancy between the two help to trace the fault. When trying to locate a faulty piece of equipment, loopbacks will be repeated, eliminating satisfactory machines until the problem is found.
 - **LVD:**
Low Voltage Differential. A differential logic scheme using lower voltage levels than HVD.
 - **MAC Address:**
In networking, Media Access Control (MAC) Address refers to the globally unique hardware address of an Ethernet network interface card.
 - **MAC layer:**
Media Access Control sub layer in the network stack.

- **Macro:**
A file containing a sequence of instructions that can be executed as one command. These commands can be in the form of a key, symbol or name. As an example, one symbol could represent a predefined list of commands.
- **Mainframe:**
Mostly a mainframe is only a mainframe when compared to a desktop computer. It's bigger and much more powerful. Sometimes it's called a server or CPU.
- **Matrix:**
As an Internet term, this would refer to computers setup within a network and all of them having the ability to exchange information. The Internet itself could be considered a Matrix.
- **MAU:**
(Medium Attachment Unit): An Ethernet device used for sending and receiving transmissions between the AUI (Attachment Unit Interface) port of a station and the common medium of the Ethernet.

- **MBR:**
Short for Master Boot Record, a small program that is executed when a computer boots up. Typically, the MBR resides on the first sector of the hard disk. The program begins the boot process by looking up the partition table to determine which partition to use for booting. It then transfers program control to the boot sector of that partition, which continues the boot process. In DOS and Windows systems, you can create the MBR with the FDISK /MBR command.

An MBR virus is a common type of virus that replaces the MBR with its own code. Since the MBR executes every time a computer is started, this type of virus is extremely dangerous. MBR viruses normally enter a system through a floppy disk that is installed in the floppy drive when the computer is started up. Even if the floppy disk is not bootable, it can infect the MBR.

- **MCNS:**
Multimedia Cable Network System Partners Ltd. The consortium behind the DOCSIS standard for cable modems.
- **Media:**
 1. Objects on which data can be stored. These include hard disks, floppy disks, CD-ROMs, and tapes.
 2. In computer networks, media refers to the cables linking workstations together. There are many different types of transmission media, the most popular being twisted-pair wire (normal electrical wire), coaxial cable (the type of cable used for cable television), and fiber optic cable (cables made out of glass).
 3. The form and technology used to communicate information. Multimedia presentations, for example, combine sound, pictures, and videos, all of which are different types of media.
- **Megabyte: (MB)**
About a million bytes of space. Actually it's 2 raised to the 20th power or 1,048,576 bytes of space.
- **Memory:**
Internal storage areas in the computer. The term memory identifies data storage that comes in the form of chips, and the word storage is used for memory that exists on tapes or disks. Moreover, the term memory is usually used as a shorthand for physical memory, which refers to the actual chips capable of holding data. Some computers also use virtual memory, which expands physical memory onto a hard disk.

Every computer comes with a certain amount of physical memory, usually referred to as main memory or RAM. You can think of main memory as an array of boxes, each of which can hold a single byte of information. A computer that has 1 megabyte of memory, therefore, can hold about 1 million bytes (or characters) of information.

- **Memory Address:**
This refers to the actual location of physical memory. These unique identifiers are assigned at the systems boot process and are used to keep track of CPU and device information for later retrieval. This process is referred to as "Memory Mapping".
- **Metadata:**
A collection of data that summarizes other data. This data is formatted to describe certain aspects of a web

page, such as:

- Name
- Description
- Title
- Author

The metadata information is used by the search engines to define a web page. This information is not viewable on the web page.

- **Microcomputer:**

A category of computer that is generally used for personal computing, for small business computing, and as a workstation attached to large computers or to other small computers on a network.

- **Microprocessor:**

A silicon chip that contains a CPU. In the world of personal computers, the terms microprocessor and CPU are used interchangeably. At the heart of all personal computers and most workstations sits a microprocessor. Microprocessors also control the logic of almost all digital devices, from clock radios to fuel-injection systems for automobiles.

Three basic characteristics that differentiate microprocessors:

- Instruction set: The set of instructions that the microprocessor can execute.
- Bandwidth: The number of bits processed in a single instruction.
- Clock Speed: Given in megahertz (MHz), the clock speed determines how many instructions per second the processor can execute.

In both cases, the higher the value, the more powerful the CPU. For example, a 32-bit microprocessor that runs at 50MHz is more powerful than a 16-bit microprocessor that runs at 25MHz.

In addition to bandwidth and clock speed, microprocessors are classified as being either RISC (reduced instruction set computer) or CISC (complex instruction set computer).

- **MIDI:**

Stands for Music Instrument Digital Interface. It allows a computer to store and replay a musical instrument's output.

- **MIFARE:**

A leading communication protocol for contactless and dual interface smart cards. MIFARE technology is used to transmit data between a card and a reader device. MIFARE technology is most widely used in the transportation industry where a person with a preprogrammed card would wave the card over a reader device to speed the ticketing process.

- **MIME:**

Multi-purpose Internet Mail Extensions. A standard that allows for the attachment of files such as images, sounds and animations to electronic mail messages. This preset information is preloaded in to the Web server and the Internet browser software. In order for this to work, both the sender and receiver of the e-mail message must be MIME compatible.

- **Minicomputer:**

A nearly obsolete term used to describe an older computer usually around the size of a refrigerator. This computer was used by businesses for processing transactions, accessing databases and running reports. These minicomputers typically accommodated between 10 - 300 users simultaneously.

- **Minislot:**

Basic timeslot unit used for upstream data bursts in the DOCSIS standard.

- **Mirror:**

In computing, this means to make an identical copy something. Usually, web sites use this to provide multiple sources of the exact same information giving its audience reliable access to large downloads at multiple locations called Mirror Sites.

- **Modem:**
This is a word created out of the beginning letters of two other words: MOdulation and DEModulation. The words mean the changing of data from digital (computer language) to analog (phone line language) and then back again. It represents the purpose of your computer's modem.
- **Mosaic:**
The first Web browser to have a consistent interface for the Macintosh, Windows, and Unix environments. It was created at the National Center for Supercomputing Applications (NCSA). The success of this browser is really responsible for the expansion of the Web.
- **Motherboard:**
The main circuit board of a microcomputer. The motherboard contains the connectors for attaching additional boards. Typically, the motherboard contains the CPU, BIOS, memory, mass storage interfaces, serial and parallel ports, expansion slots, and all the controllers required to control standard peripheral devices, such as the display screen, keyboard, and disk drive. Collectively, all these chips that reside on the motherboard are known as the motherboard's chipset.

On most PCs, it is possible to add memory chips directly to the motherboard. You may also be able to upgrade to a faster CP by replacing the CPU chip. To add additional core features, you may need to replace the motherboard entirely.
- **MP3:**
Stands for MPEG (Moving Picture Expert Group) Audio Layer 3. This is a compression standard that was developed to create a small audio file size while keeping a high quality sound. The small file size allows the sound to be streamed or downloaded over the Internet with ease.
- **MP4:**
Stands for MPEG (Moving Picture Expert Group) - 4. Finalized toward the end of 1998, this became an International Standard in the beginning of 1999. This was developed to provide low bandwidth multimedia applications.
- **MPEG:**
Stands for Motion Picture Experts Group. A format to make, view, and transfer both digital audio and digital video files.
- **MSO:**
Multiple Service Operator. A cable TV service provider that also provides other services such as data and/or voice telephony.
- **MSQL (Mini Structured Query Language):**
A lightweight client/server database that is the popular choice for open source developers. It is designed to provide quick access to data while only requiring a small amount of memory.
- **Multimedia Extensions (MMX):**
A technology created by Intel Corporation that enhances audio and video capabilities. MMX is found in Pentium III and later CPU's and is also found in AMD K6 series CPU's. Microprocessors that have MMX can handle tasks that usually are handled by a separate component, such as; Digital Signal Processing (DSP) is a common multimedia operation that is normally handled by a separate audio or video card. The direct benefit of this technology includes speeding up such things as; image processing, motion video, speech synthesis, telephony, and 3D graphics.
- **Multiplexer:**
This is a piece of hardware that allows one item to take the place of several. An example would be using a multiplexer to allow 10 computers to attach where only one could before.
- **Mux:**
See Multiplexer
- **NACS:**
Stands for Netware Asynchronous Communication Services.

- **Nanosecond:**

A billionth of a second. Many computer operations, such as the speed of memory chips, are measured in nanoseconds. Nanosecond is often abbreviated as ns.

- **Native:**

The relationship between a transport user and a transport provider, both being based on the same transport protocol. Also, a specific software could be written to run on a specific processor, which would make that software 'native' to that processor.

- **Netbeui:**

Netbeui is short for NetBios Enhanced User Interface. It is an enhanced version of the NetBIOS protocol used by network [operating systems](#) such as LAN Manager, LAN [Server](#), Windows for Workgroups, Windows 95 and Windows NT.

Netbeui was originally designed by IBM for their Lan Manager server and later extended by Microsoft and Novell.

- **Network:**

This a system that sends and receives data.

- **Network Adapter:**

This is a hardware unit that connects a device to a communication line. For wide area networks (WAN), these adapters connect routers to the specific type of connection (T1, BRI) that is installed. For local area networks (LAN), these adapters connect [workstations](#) to the LAN (Ethernet or TokenRing) cabling.

- **Network Card:**

Also, Network Interface Card or NIC. This is a component of a computer that enables the computer to communicate with other [computers](#) via a direct network connection.

- **Newsgroup:**

An online discussion community found on the USENET system. These groups cover thousands of different topics of information and are offered free of charge.

- **NLX:**

New Low-Profile eXtended ([motherboard](#) form factor). The NLX form factor features a number of improvements over the previous design LPX form factor and began heavy usage in late 1997. The popularity of the design was confirmed by massive design use in 1998. The popularity has made it Intel's flagship line and one of the profit leaders in chipsets. Its features include:

1. Support for larger memory modules and DIMMs.
 2. Support for the newest microprocessors, including the Pentium II using SEC packaging.
 3. Support for AGP video cards.
 4. Better access to motherboard components.
 5. Support for dockable designs in which the motherboard can be removed without tools.
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- **Node:**

In networks, a processing location. A node can be a computer or some other device, such as a printer. Every node has a unique network address, sometimes called a Data Link Control (DLC) address or Media Access Control (MAC) address.

- **Noise:**

Interference (static) that destroys the integrity of signals on a line. Noise can come from a variety of sources, including radio waves, nearby electrical wires, lightning, and bad connections. One of the major advantages of fiber optic cables over metal cables is that they are much less susceptible to noise.

- **NTFS:**

Short for NT File System, one of the file system for the Windows NT [operating system](#) (Windows NT also supports the FAT file system). NTFS has features to improve reliability, such as transaction logs to help recover from disk failures. To control access to files, you can set permissions for directories and/or individual files. NTFS files are not accessible from other operating such as DOS.

For large applications, NTFS supports spanning volumes, which means files and directories can be spread out across several physical disks.

- **NTLDR:**
Short for NT Loader, a program loaded from the hard drive boot sector that displays the Microsoft Windows NT startup menu and helps Windows NT load.
 - **Null Value:**
In computer programming, this represents something of no value. A null value could also indicate that the value for a row is either missing or not known. Placing a zero in a row would not be representative of a null value because zero is a value.
 - **NUMA (Non-Uniform Memory Access):**
A method of configuring a cluster of microprocessor in a multiprocessing system so that they can communicate with each other, this improves performance and its expansion ability.
 - **NVRAM:**
(Non-Volatile Random Access Memory) Any type of memory that is made non-volatile by connecting it to a constant power source, such as a battery. Therefore, non-volatile memory does not lose its contents when the main power is turned off.
 - **Object:**
Something that contains both the [data](#) and the application that operates on that data.
 - **ODBC Administrator:**
Developed by Microsoft for its Windows [operating systems](#). The icon for the ODBC is named "Data Sources" and is located in the Control Panel under Administrative Tools in the Windows 2000 and XP operating systems. This Data Source Administrator is responsible for managing [database](#) drivers and configuring the user and system Data Source Names (DSN). A UNIX system does not use this method, its data source information is stored in text configuration files.
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- **OEM:**
(Original Equipment Manufacturer) This is a designation for companies that manufacture equipment that is then marketed and sold off to other companies under their own names.
 - **OOP:**
Stands for Object Oriented Program. A larger program made up of smaller objects.
 - **Opacity:**
The quality that defines how much light passes through an object's pixels. If an object is 100 percent opaque, no light passes through it.
 - **Operating System:**
The most important program that runs on a computer. Every general-purpose computer must have an [operating system](#) to run other programs. Operating systems perform basic tasks, such as recognizing input from the keyboard, sending output to the display screen, keeping track of files and directories on the disk, and controlling peripheral devices such as disk drives and printers.

For large systems, the operating system has even greater responsibilities and powers. It is like a traffic cop -- it makes sure that different programs and users running at the same time do not interfere with each other. The operating system is also responsible for security, ensuring that unauthorized users do not access the system.

Operating systems provide a software platform on top of which other programs, called application programs, can run. The application programs must be written to run on top of a particular operating system. Your choice of operating system, therefore, determines to a great extent the applications you can run. For [PCs](#), the most popular operating systems are DOS, OS/2, and Windows, but others are available, such as [Linux](#).

As a user, you normally interact with the operating system through a set of commands. For example, the DOS operating system contains commands such as COPY and RENAME for copying files and changing the names of files, respectively. The commands are accepted and executed by a part of the operating system called the

command processor or command line interpreter. Graphical user interfaces allow you to enter commands by pointing and clicking at objects that appear on the screen.

- **Oracle:**
A high-end database management software created by Oracle Corporation. Oracle's relational database pioneered the support of the SQL language which is now an industry standard.
- **OSI Reference Model (Open Systems Interconnect):**
A network communications software standard that consists of a seven layer structure of specified protocol and services.
- **Overclock:**
To run a microprocessor faster than the speed for which it has been tested and approved. Overclocking is a popular technique for eking out a little more performance from a system. In many cases, you can force your CPU to run faster than it was intended simply by setting a jumper on the motherboard. Overclocking does come with some risks, however, such as over-heating, so you should become familiar with all the pros and cons before you attempt it.

Overclocking is sometimes called speed margining.
- **PPP:**
Stands for Point To Point Protocol. It's a software application that allows an attachment to a server.
- **Packet:**
A unit of data formatted to transmit through a network. A packet is sent from a source to a destination.
- **Parallel Port:**
A parallel interface for connecting an external device such as a printer. Most personal computers have both a parallel port and at least one serial port. On PCs, the parallel port uses a 25-pin connector (type DB-25) and is used to connect printers, computers and other devices that need relatively high bandwidth. It is often called a Centronics interface after the company that designed the original standard for parallel communication between a computer and printer. (The modern parallel interface is based on a design by Epson.)

A newer type of parallel port, which supports the same connectors as the Centronics interface, is the EPP (Enhanced Parallel Port) or ECP (Extended Capabilities Port). Both of these parallel ports support bi-directional communication and transfer rates ten times as fast as the Centronics port.

Macintoshes have a SCSI port, which is parallel, but more flexible.
- **Parity:**
In data communications, this is an data error detection scheme. It deals with a fact that all numbers have a parity (odd or even, eg: 1 or 0).
- **Partition:**
A portion of a hard disk that functions as a separate unit. A single hard disk can be divided into several partitions, each of which functions as a separate drive and has its own volume name (such as D:, E:, F:, and so on). The purpose is to make the drive more efficient, as the computer can search smaller sections for a specific file rather than the entire drive. The verb to partition refers to the process of dividing the hard drive into partitions.
- **Passive Matrix:**
An older form of LCD (liquid crystal display) technology that processes pixels using row-and-column formatting. This type of formatting produces slower response times and lower contrast ratios when compared to Active Matrix LCD.
- **Patch Panel:**
In networking a patch panel connects all networked computers to the incoming and outgoing lines of a LAN (Local Area Network) or any other electronic communications system.
- **Path:**
A path can be described as a file's address on your file system, describing where the file lives: An absolute path gives the complete path, starting at the root directory, or the very top of the file system; A relative path looks for a file from the directory you are currently in down.
- **PCI:**

Acronym for Peripheral Component Interconnect, a local bus standard developed by Intel Corporation. Most modern PCs include a PCI bus in addition to a more general ISA expansion bus. Many analysts, however, believe that PCI will eventually supplant ISA entirely. PCI is also used on newer versions of the Macintosh computer.

PCI is a 64-bit bus, though it is usually implemented as a 32-bit bus. It can run at clock speeds of 33 or 66 MHz. At 32 bits and 33 MHz, it yields a throughput rate of 133 MBps.

Although it was developed by Intel, PCI is not tied to any particular family of microprocessors.

- **PDF:**
Stands for Portable Document Format. A technology developed by Adobe and was designed to capture all of the elements of a printed document and place it in a single image file. This PDF file can be navigated, printed or attached to an email for sharing. In order to be able to view a PDF file on your computer, you will need to download and install the free Acrobat Reader. Once installed, anytime a PDF file is clicked, the image file will automatically be viewed.
- **Peer to Peer:**
A type of network in which each workstation has equivalent capabilities and responsibilities. This differs from client/server architectures, in which some computers are dedicated to serving the others. Peer-to-peer networks are generally simpler and less expensive, but they usually do not offer the same performance under heavy loads.
- **Pen Drive:**
A small keyring-sized device that can be used to easily transfer files between USB-compatible systems. Available in a range of capacities (and in some cases, with an MP3 player built-in). Plug it in to any USB port and it will be automatically detected by the Operating System.
- **Peripheral:**
Any external device attached to a computer. Examples of peripherals include printers, disk drives, display monitors, keyboards, and mice.
- **PGA:**
Short for Pin Grid Array, a type of chip package in which the connecting pins are located on the bottom in concentric squares. PGA chips are particularly good for chips that have many pins, such as modern microprocessors. Compare with DIP and SIP.
Short for Professional Graphics Adapter, a video standard developed by IBM that supports 640x480 resolution.
- **Phishing:**
Short for Password Harvesting Fishing. It is the luring of sensitive information, such as passwords and other personal information, from a victim by masquerading as someone trustworthy with a real need for such information.

Popular targets are users of online banking services, and auction sites such as eBay. Phishers usually work by sending out spam e-mail to large numbers of potential victims. Typically the email will appear to come from a trustworthy company and contain a subject and message intended to alarm the recipient into taking action.

A common approach is to tell the recipient that their account has been de-activated due to a problem and inform them that they must take action to re-activate their account. The user is provided with a convenient link in the same email that takes the email recipient to a fake web page appearing to be that of a trustworthy company. Once at that page, the user enters her personal information which is then captured by the fraudster.

- **PHP:**
(Hypertext Preprocessor) is a server-side, HTML-embedded scripting language used to create dynamic Web pages. In an HTML document, PHP script (similar syntax to that of Perl or C) is enclosed within special PHP tags. Because PHP is embedded within tags, the author can jump between HTML and PHP (similar to ASP and Cold Fusion) instead of having to rely on heavy amounts of code to output HTML. Because PHP is executed on the server, the client cannot view the PHP code. PHP can perform any task any CGI program can, but its strength lies in its compatibility with many types of databases. Also, PHP can talk across networks using IMAP, SNMP, NNTP, POP3 or HTTP.
- **PICT:**
Pronounced "Pick,t." It is another image format.
- **PING:**
Packet Internet or Inter-Network Groper; a utility used to determine whether a particular computer is currently

connected to the Internet. It works by sending a packet to the specified IP address and waiting for a reply. The computer acronym "PING" was contrived to match the submariners' term for the sound of a returned sonar pulse.

- **Pinout:**
A diagram or table that describes the purpose of each pin in a chip or connector, or each wire in a cable.
- **PIO:**
(Programmed Input/Output) A method of data transfer in which the host microprocessor transfers data to and from memory via the computer's I/O ports. PIO enables very fast data transfer rates, especially in single-tasking operating systems like DOS.
- **Pipeline Burst Cache:**
A type of memory cache built into many modern DRAM controller and chipset designs. Pipeline burst caches use two techniques - a burst mode that pre-fetches memory contents before they are requested, and pipelining so that one memory value can be accessed in the cache at the same time that another memory value is accessed in DRAM. The purpose of pipeline burst caches is to minimize wait states so that memory can be accessed as fast as possible by the microprocessor.
- **Pipelining:**
A processor performance enhancement process that allows for a second instruction to be performed before the first has completed. This process produces a steady stream of information and greatly increases the productivity of the processor.
- **Pixel:**
Short for Picture Element, a pixel is a single point in a graphic image. Graphics monitors display pictures by dividing the display screen into thousands (or millions) of pixels, arranged in rows and columns. The pixels are so close together that they appear connected.

The number of bits used to represent each pixel determines how many colors or shades of gray can be displayed. For example, in 8-bit color mode, the color monitor uses 8 bits for each pixel, making it possible to display 2 to the 8th power (256) different colors or shades of gray.

On color monitors, each pixel is actually composed of three dots -- a red, a blue, and a green one. Ideally, the three dots should all converge at the same point, but all monitors have some convergence error that can make color pixels appear fuzzy.

The quality of a display system largely depends on its resolution, how many pixels it can display, and how many bits are used to represent each pixel. VGA systems display 640 by 480, or about 300,000 pixels. In contrast, SVGA systems display 1,024 by 768, or nearly 800,000 pixels. True Color systems use 24 bits per pixel, allowing them to display more than 16 million different colors.

- **Platform:**
A combination of hardware and operating system you use, for example, the "NT platform" is a PC running the Microsoft Windows NT operating system and the "PPC platform" is a Macintosh computer with a PowerPC processor running the Mac operating system.
- **PLD:**
(Programmable Logic Device) A digital integrated circuit that can be programmed by the user to perform a wide variety of logical operations.
- **Plotter:**
A computer output device that draws images on paper using a pen. A plotter draws real lines rather than simulating them as a conventional printer would by producing a series of very close dots.
- **Plug-In:**
This is a program that your browser uses to manipulate a downloaded file. It differs from a Helper Application in that the plug-in works inside the browser window.
- **PNP:**
Short for Plug and Play, a technology developed by Microsoft and Intel that supports plug-and-play installation. PnP is built into the Windows 95 operating system, but to use it, the computer's BIOS and expansion boards must also support PnP.
- **Port:**
This is the connecting component or hardware that allows two computers to attach to one another.

- **Portal:**

A web site that aims to be an entry point to the World-Wide Web, typically offering a search engine and/or links to useful pages, and possibly news or other services. These services are usually provided for free in the hope that users will make the site their default home page or at least visit it often. Popular examples are Yahoo and MSN. Most portals on the Internet exist to generate advertising income for their owners, others may be focused on a specific group of users and may be part of an intranet or extranet. Some may just concentrate on one particular subject, say technology or medicine, and are known as a vertical portals.

- **POST:**

Short for power-on self test, a series of diagnostic tests that run automatically when you turn your computer on. The actual tests can differ depending on how the BIOS is configured, but usually the POST tests the RAM, the keyboard, and the disk drives. If the tests are successful, the computer boots itself. If the tests are unsuccessful, the computer reports the error by emitting a series of beeps and possibly displaying an error message and code on the display screen. The number of beeps indicates the error, but differs from one BIOS to another.

- **POP:**

Point of Presence, also Post Office Protocol

Two commonly used meanings:

A Point of Presence usually means a city or location where a network can be connected to, often with dial up phone lines. So if an Internet company says they will soon have a POP in Belgrade, it means that they will soon have a local phone number in Belgrade and/or a place where leased lines can connect to their network.

A second meaning, Post Office Protocol refers to a way that e-mail client software, such as Outlook, gets mail from a mail server. When you obtain an account from an Internet Service Provider (ISP) you almost always get a POP account with it, and it is this POP account that you tell your e-mail software to use to get your mail. Another protocol called IMAP is replacing POP for email.

- **Primary Cache:**

Primary cache is the cache located closest to the CPU. Usually, primary cache is internal to the CPU, and secondary cache is external. Some early-model personal computers have CPU chips that don't contain internal cache. In these cases the external cache, if present, would actually be the primary (L1) cache.

- **Primary Key:**

A set of one or more values in a database that uniquely identifies a record in a table.

- **Primitive:**

This refers to low-level objects or older objects that can be introduced in to a higher-level object to construct a more complex object.

- **Proof Theory:**

This deals with the actual "logic" of the programming. Using mathematical analysis techniques, the programming language is proof checked.

- **Processor:**

A processor is a device that processes programmed instructions and performs tasks. Your processor sends and receives information from the different parts of the system (from hardware and software). The speed at which the CPU processes information internally is measured in MegaHertz (MHz) and GigaHertz (GHz). 1 GHz is equal to 1,000 MHz.

- **Programmable Read-Only Memory (PROM):**

A special memory chip that is blank when first purchased. It can be written to by the user by using a special hardware programmer. Once the data is written to it, it cannot be erased or changed.

- **Protocol:**

An agreed-upon format for transmitting data between two devices. The protocol determines the following:

- The type of error checking to be used.
- Data compression method, if any.
- How the sending device will indicate that it has finished sending a message.
- How the receiving device will indicate that it has received a message.

There are a variety of standard protocols from which programmers can choose. Each has particular advantages and disadvantages; for example, some are simpler than others, some are more reliable, and some are faster. From a user's point of view, the only interesting aspect about protocols is that your computer or device must support the right ones if you want to communicate with other computers. The protocol can be implemented

either in hardware or in software.

- **Proxy Server:**

A server that acts as an intermediary between a workstation user and the internet so that the enterprise can ensure security, administrative control, and caching service. A proxy server is associated with, or part of, a gateway server that separates the enterprise network from the outside network and a firewall server that protects the enterprise network from the outside intrusion.

- **PS/2 Port:**

A type of port developed by IBM for connecting a mouse or keyboard to a PC. The PS/2 port supports a mini DIN plug containing just 6 pins. Most PCs have a PS/2 port so that the serial port can be used by another device, such as a modem. The PS/2 port is often called the mouse port.

- **PXE:**

Pre-boot eXecution Environment. (pronounced "pixie") Created by Intel, it is one of their WfM specification components. A PXE-enabled workstation has a jumper that connects its NIC to the LAN which will keep the workstation connected to the network even when there is no power. Having this installed jumper, the system administrator will not have to physically visit this workstation to load software or run diagnostic programs. It is all done over the network.

- **QAM:**

Quadrature Amplitude Modulation. A method of modulating digital signals using both amplitude and phase coding. Used for downstream and can be used for upstream.

- **QPSK:**

Quadrature Phase-Shift Keying. A method of modulating digital signals using four phase states to code two digital bits per phase shift.

- **Quartz:**

A powerful graphics system that delivers a rich imaging model, on-the-fly rendering, anti-aliasing, and compositing of PostScript graphics. Quartz also implements the windowing system for Mac OS X and provides low-level services such as event handling and cursor management. It also offers facilities for rendering and printing that use PDF as an internal model for graphics representation.

- **Query:**

This is to make a computer request of a database.

- **QuickTime Player:**

A multimedia technology developed by Apple Computer. Developed to display video, sound, animation, graphics, text, music and 360 degree virtual reality (VR) scenes. Apple makes its QuickTime plug-in available for free and once installed on your computer system, you can watch streaming media within a web page.

- **Radio Frequency Identification:**

RFID first appeared in tracking and access applications during the 1980s. It is a method of remotely storing and retrieving data using devices called RFID tags/transponders and is coming into increasing use as an alternative to the bar code.

- **RAID:**

Short for Redundant Array of Independent (or Inexpensive) Disks, a category of disk drives that employ two or more drives in combination for fault tolerance and performance. RAID disk drives are used frequently on servers but aren't generally necessary for personal computers.

There are number of different RAID levels. The three most common are 0, 3, and 5:

Level 0: Provides data striping (spreading out blocks of each file across multiple disks) but no redundancy. This improves performance but does not deliver fault tolerance.

Level 1: Provides disk mirroring.

Level 3: Same as Level 0, but also reserves one dedicated disk for error correction data. It provides good performance and some level of fault tolerance.

Level 5: Provides data striping at the byte level and also stripe error correction information. This results in excellent performance and good fault tolerance.

- **RAM:**

(Random Access Memory) A configuration of memory cells that hold data for processing by a computer's central processing unit, or CPU; (see also memory). The term random derives from the fact that the CPU can retrieve data from any individual location, or address, within RAM.

- **Ranging:**

The process of automatically adjusting transmit levels and time offsets of individual modems, in order to make sure the bursts coming from different modems line up in the right timeslots and are received at the same power level at the CMTS.

- **RAS:**

Short for Remote Access Services, a feature built into Windows NT that enables users to log into an NT-based LAN using a modem, X.25 connection or WAN link. RAS works with several major network protocols, including TCP/IP, IPX, and Netbeui.

To use RAS from a remote node, you need a RAS client program, which is built into most versions of Windows, or any PPP client software. For example, most remote control programs work with RAS.

- **RDRAM:**

Rambus DRAM technology is a system-wide, chip-to-chip interface design that allows data to pass through a simplified bus. Rambus uses a unique RSL (Rambus Signaling Logic) technology. Rambus is available in two flavors: RDRAM and Concurrent RDRAM. RDRAM is currently in production with Concurrent RDRAM production scheduled for late 1997. The third line extension, Direct RDRAM, is in development stages and scheduled for production in 1999. In late 1996, Rambus agreed to a development and license contract with Intel that will lead to Intel's PC chip sets supporting Rambus memory starting in 1999.

- **RealAudio:**

This is a method of playing sounds invented by Rob Glasser that creates a buffer between the supplying server and your computer. The file is played without downloading it completely.

- **Real Player:**

Developed by RealNetworks, this is a cross-platform multi-media player.

- **Real Time:**

This is method of processing data the moment it is received. Batch mode is a term used for a mainframe computer dealing with data when it has the time.

- **Reboot:**

To restart a computer. In DOS, you can reboot by pressing the Alt, Control and Delete keys simultaneously. This is called a warm boot. You can also perform a cold boot by turning the computer off and then on again.

On Macs, you reboot by selecting the "Restart" option from the Special menu.

- **Redundant:**

Array of Inexpensive (or Interconnected) Disks. A performance enhancing method of storing the same data in different places on multiple hard disks. Unnecessary redundancy can cause problems if one copy of the data is updated and another copy of the data is not. All redundant data can't be eliminated in most databases because primary keys in one table are repeated in other tables as foreign keys to create links between tables. This type of redundancy is called controlled redundancy.

- **Refresh:**

Generally, to update something with new data. For example, some Web browsers include a refresh button that updates the currently display Web pages. This feature is also called reload.

To recharge a device with power or information. For example, dynamic RAM needs to be refreshed thousands of times per second or it will lose the data stored in it.

Similarly, display monitors must be refreshed many times per second. The refresh rate for a monitor is measured in hertz (Hz) and is also called the vertical frequency, vertical scan rate, frame rate or vertical refresh rate. The old standard for monitor refresh rates was 60Hz, but a new standard developed by VESA sets the refresh rate at 75Hz for monitors displaying resolutions of 640x480 or greater. This means that the monitor redraws the display 75 times per second. The faster the refresh rate, the less the monitor flickers.

- **Refresh Rate:**
Refers to the speed in which an image can be flashed or re-drawn on a monitor's screen. The higher the refresh rate, the more unnoticeable the flashing will be to the naked eye. A low refresh rate will make the imagery appear very unsteady or jerky. The typical refresh rate in the United States is 60 hertz (Hz).
- **Registered Memory:**
This memory uses "registers" which are extra chips designed to delay the flow of data. By delaying the data flow, it allows for better control over communication in systems with heavily loaded memory.
- **Registry:**
In a Windows operating system, the registry is the database of information that stores all of the setup, user preferences, software and hardware configuration information.
- **Relational Database:**
A method in which data is stored in multiple tables so that the data can be organized by pre-defined relationships.
- **Repeater:**
A device that receives weak incoming signals, boosts the signal and then retransmits the signal. Its purpose is to extend the signal's distance while keeping adequate signal strength.
- **Resolution:**
Refers to the sharpness and clarity of an image. The term is most often used to describe monitors, printers, and bit-mapped graphic images. In the case of dot-matrix and laser printers, the resolution indicates the number of dots per inch. For example, a 300-dpi (dots per inch) printer is one that is capable of printing 300 distinct dots in a line 1 inch long. This means it can print 90,000 dots per square inch.

For graphics monitors, the screen resolution signifies the number of dots (pixels) on the entire screen. For example, a 640-by-480 pixel screen is capable of displaying 640 distinct dots on each of 480 lines, or about 300,000 pixels. This translates into different dpi measurements depending on the size of the screen. For example, a 15-inch VGA monitor (640x480) displays about 50 dots per inch.

Printers, monitors, scanners, and other I/O devices are often classified as high resolution, medium resolution, or low resolution. The actual resolution ranges for each of these grades is constantly shifting as the technology improves.
- **Resource:**
Generally, any item that can be used. Devices such as printers and disk drives are resources, as is memory. In many operating systems, including Microsoft Windows and the Macintosh operating system, the term resource refers specifically to data or routines that are available to programs. These are also called system resources.
- **RFID:**
Radio Frequency identification (ID). Refers to the technology that uses devices attached to objects that transmit data to an RFID receiver. An alternative to bar coding. Advantages include data capacity, read/write capability, and no line-of-sight requirements.
- **RIMM:**
Rambus In-Line Memory Module. RIMM is a synchronous dynamic random access memory (RAM) module that is used on newer motherboards. RIMM's are manufactured by Rambus Corporation.
- **Ripper:**
This refers to a software application capable of transferring digital audio files from a CD to a hard drive.
- **RISC:**
Reduced Instruction Set Computer. A computer processing architecture that requires fewer instructions to run applications, thus increasing processing speed.
- **RJ-11:**
Short for Registered Jack-11, a four- or six-wire connector used primarily to connect telephone equipment in the

United States. RJ-11 connectors are also used to connect some types of local-area networks (LANs), although RJ-45 connectors are more common.

- **RJ-45:**
Short for Registered Jack-45, an eight-wire connector used commonly to connect computers onto a local-area networks (LAN), especially Ethernets. RJ-45 connectors look similar to the ubiquitous RJ-11 connectors used for connecting telephone equipment, but they are somewhat wider.
- **ROM:**
Stands for Read-Only Memory. A semiconductor-based memory system that stores information permanently and does not lose its contents when power is switched off. ROMs are used for firmware, such as the BIOS used in the PC; and in some portable computers, application programs and even the operating system are being stored in ROM.
- **Rootkit:**
A set of programs used by hackers to gain access to information contained in your operating system and can even mask its presence. The program can also be used to access computers within a network. Usually, the rootkit is written for malicious purposes.
- **Router:**
A device that connects any number of LANs. Routers use headers and a forwarding table to determine where packets go, and they use ICMP to communicate with each other and configure the best route between any two hosts. Very little filtering of data is done through routers. Routers do not care about the type of data they handle.
- **Routing Switch:**
A switch that also performs routing operations. Usually a switch operates at layer 2 (the Data Link layer) of the OSI Reference Model while routers operate at layer 3 (the Network layer). Routing switches, however, perform many of the layer 3 functions usually reserved for routers. And because the routing is implemented in hardware rather than software, it is faster. The downside of routing switches is that they are not as powerful or as flexible as full-fledged routers.

Because they perform some layer 3 functions, routing switches are sometimes called layer-3 switches.

- **RPL:**
Request Parameter List. A VTAM (Virtual Telecommunications Access Method) control block that contains parameters necessary for processing a request (data transfer, connecting or disconnecting a terminal, etc).

Also, Relocatable Program Library. A data set used to store CICS (Customer Information Control System) application programs, which are fetched (loaded) at execution time.
- **RSS: (Rich Site Summary)**
XML format for distributing news headlines on the Web, also known as Really Simple Syndication.
- **SATA:**
Serial Advanced Technology Attachment. A computer bus designed to transfer data to and from a hard drive using serial signaling technology. Because SATA cables are thinner than its ribbon type counterpart, they can be connected to more devices while maintaining its signal integrity.
- **Scalable:**
Basically, a scalable system or system architecture is one that can be modified in its size or configuration to suit changing conditions. As an example, a company that is set up to run a client/server type network may only have 10 people currently set up on the network, but the company plans to have many more set up in the coming years. In this instance, they would need to be able to make this network scalable.
- **Scalar Processing:**
A process that calculates numbers in sequence.
- **Scope:**
In computer programming, this would refer to a specific identifying enclosing context. Each programming language uses various types of scopes to accomplish different things.
- **Screen Flicker:**
This is generally referring to the flickering of a display screen and can be caused by a number of factors, the

most important of which is the monitor's refresh rate, or the speed that the screen is re-drawn. If the refresh rate is too slow, the screen will appear to glimmer. Another factor that affects screen flicker is the persistence of the screen phosphors. Low-persistence phosphors fade more quickly than high-persistence monitors, making screen flicker more likely. Screen flicker can also be affected by lighting. Finally, screen flicker is a subjective perception that affects people differently. Some people perceive screen flicker where others do not. Most people perceive no screen flicker if the refresh rate is 72 MHz or higher.

- **SCSI:**

Abbreviation of "Small Computer System Interface". It is pronounced "scuzzy," and is a parallel interface standard used by Apple Macintosh computers, PCs, and many UNIX systems for the purpose of attaching peripheral devices to computer systems. Nearly all Apple Macintosh computers, excluding only the earliest Macs and the recent iMac, come with a SCSI port for attaching devices such as disk drives and printers.

SCSI interfaces provide for faster data transmission rates (up to 80 megabytes per second) than standard serial and parallel ports. In addition, you can attach many devices to a single SCSI port, so that SCSI is really an I/O bus rather than simply an interface.

The following varieties of SCSI are currently implemented:

SCSI-1: Uses an 8-bit bus, and supports data rates of 4 MBps

SCSI-2: Same as SCSI-1, but uses a 50-pin connector instead of a 25-pin connector, and supports multiple devices. This is what most people mean when they refer to plain SCSI.

Wide SCSI: Uses a wider cable (168 cable lines to 68 pins) to support 16-bit transfers.

Fast SCSI: Uses an 8-bit bus, but doubles the clock rate to support data rates of 10 MBps.

Fast Wide SCSI: Uses a 16-bit bus and supports data rates of 20 MBps.

Ultra SCSI: Uses an 8-bit bus, and supports data rates of 20 MBps.

SCSI-3: Uses a 16-bit bus and supports data rates of 40 MBps. Also called Ultra Wide SCSI.

Ultra2 SCSI: Uses an 8-bit bus and supports data rates of 40 MBps.

Wide Ultra2 SCSI: Uses a 16-bit bus and supports data rates of 80 MBps.

- **SDH:**

Synchronous Digital Hierarchy. A method used for multiplexing many circuits with a low bit rate onto fewer circuits with a higher bit rate, and vice-versa (de-multiplexing). Used primarily in the telecomms industry to carry telephony traffic. This network can also be used to carry IP traffic.

- **SDRAM:**

Short for "Synchronous Dynamic Random Access Memory". This is a newer type of DRAM that has the ability to run at much higher clock speeds than conventional memory. SDRAM actually synchronizes itself with the CPU's bus and is capable of running at 100 MHz, about three times faster than conventional FPM RAM, and about twice as fast EDO DRAM and BEDO DRAM. SDRAM is replacing EDO DRAM in many newer computers.

Today's fastest Pentium systems use CPU buses running at 100 MHz, so SDRAM can keep up with them, though barely. Future PCs, however, are expected to have CPU buses running at 200 MHz or faster. SDRAM is not expected to support these high speeds which is why new memory technologies, such as RDRAM and SLDRAM, are being developed.

- **Secondary Cache:**

Also referred to as "Level 2 cache" or "L2". In general, L2 cache memory resides on a separate external chip from the microprocessor chip. However, The Pentium Pro processor has an L2 cache on the same chip as the microprocessor.

- **Semantics:**

A relationship between words, phrases or any other allowable constraint and their actual meaning. This is contrast to "Syntax". An example could be; if you enter a misspelled command, it would be a syntax error, but if you enter what may be a legitimate command but is not understood in its current context, this would be a "semantics error".

- **Semiconductor:**

This refers to a material that is not a good conductor of electricity (copper) nor a good insulator (plastic). Silicon and germanium are the most common semiconductor materials.

Semiconductor materials are used in computer chips, both for CPU and memory. Its purpose is to create miniature electronic components that take up less space and require less energy.

- **SEO:**
(Search Engine Optimization) SEO is a process of arranging a web site's content to obtain high rankings in various search engines (both the site and individual pages), and includes tailoring on-page text (such as headlines and subtitles) as well as choosing the proper keywords for a page's meta tags.
- **Serialization:**
A sequence of commands that execute orders in a database.
- **Serial Port:**
A port, or interface, that can be used for serial communication, in which only 1 bit is transmitted at a time. Most serial ports on personal computers conform to the RS-232C or RS-422 standards. A serial port is a general-purpose interface that can be used for almost any type of device, including modems, mice, and printers (although most printers are connected to a parallel port).
- **Server:**
This is a mainframe computer that serves the other computers attached to it.
- **SGRAM:**
Abbreviation of "Synchronous Graphic Random Access Memory". This is a type of DRAM used commonly on graphics accelerators and video adapters. Like SDRAM, SGRAM can synchronize itself with the CPU bus clock up to speeds of 100 MHz.
- **Shadowing:**
A technique used to increase a computer's speed by using high-speed RAM memory in place of slower ROM memory (RAM is about three times as fast as ROM). On PCs, for example, all code to control hardware devices, such as keyboards, is normally executed in a special ROM chip called the BIOS ROM. However, this chip is slower than the general-purpose RAM that comprises main memory. Many PC manufacturers, therefore, configure their PCs to copy the BIOS code into RAM when the computer boots. The RAM used to hold the BIOS code is called shadow RAM.
- **Shareware:**
Software distributed on the basis of an honor system. Most shareware is delivered free of charge, but the author usually requests that you pay a small fee if you like the program and use it regularly. By sending the small fee, you become registered with the producer so that you can receive service assistance and updates. You can copy shareware and pass it along to friends and colleagues, but they too are expected to pay a fee if they use the product.

Shareware is inexpensive because it is usually produced by a single programmer and is offered directly to customers. Thus, there are practically no packaging or advertising expenses.

- **Sheet Tab:**
In spreadsheet applications, this would refer to a tab at the bottom of a work sheet that acts as a means to identify or access different sheets within a workbook.
- **Shell:**
Just like the shell of an egg is the outermost layer, in computer technology, this refers to the outermost layer of a program. Operating systems and applications sometimes provide an alternative shell to make interaction with the program easier. For example, if the application is usually command driven, the shell might be a menu-driven system that translates the user's selections into the appropriate commands.

Sometimes called command shell, a shell is the command processor interface. The command processor is the program that executes operating system commands. The shell, therefore, is the part of the command processor that accepts commands. After verifying that the commands are valid, the shell sends them to another part of the command processor to be executed.

- **SID (Service ID):**
Used in the DOCSIS standard to defines a particular mapping between a cable modem (CM) and the CMTS. The SID is used for the purpose of upstream bandwidth allocation and class-of-service management.
- **SIMM:**

Acronym for single in-line memory module, a small circuit board that can hold a group of memory chips. Typically, SIMMs hold up to 8 (on Macintoshes) or 9 (on PCs) RAM chips. On PCs, the ninth chip is often used for parity error checking. Unlike memory chips, SIMMs are measured in bytes rather than bits. SIMMs are easier to install than individual memory chips.

The bus from a SIMM to the actual memory chips is 32 bits wide. A newer technology, called dual in-line memory module (DIMM), provides a 64-bit bus. For modern Pentium microprocessors that have a 64-bit bus, you must use either DIMMs or pairs of SIMMs.

- **Simplex:**
A one directional communications circuit that can only either transmit or receive, but not both. Two good examples of simplex devices would be your TV or an FM radio.
- **SIP:**
Abbreviation of single in-line package, a type of housing for electronic components in which the connecting pins protrude from one side. Compare with DIP and PGA. A SIP is also called a Single In-line Pin Package (SIPP).
- **Skype:**
This is a peer-to-peer voice over Internet protocol (VoIP). This Internet telephony network was created by the same people that created Kazaa (Niklas Zennström and Janus Friis). It was developed as a free desktop software application that gives users the ability to make free Internet phone calls to other Skype users or you can use the application to place and receive phone calls to and from traditional phone lines for a reduced fee.
- **SLIP:**
Stands for Serial Line Interface Protocol. This is another application that allows for a connection to another computer.
- **SMS (Short Message Service):**
A popular wireless service that is used for sending and receiving short messages up to a maximum of 160 characters. The service is used for text messaging between cell phones that are on a GSM (Global System for Mobile) network.
- **SMTP:**
Stands for Simple Mail Transfer Protocol.
- **SNMP:**
Stands for "Simple Network Management Protocol". It was developed in 1988 and has become a standard for Internet work management and used almost exclusively in TCP/IP networks.
- **Socket:**
In computer technology, a Socket refers to a receptacle that provides a means of communication between two processes.
- **Socket 7:**
Socket 7 is a connection format used on older processors such as the Cyrix M2, AMD K6 and K6-2.
- **Socket 8:**
The Socket 8 connection format was exclusively used on Intel Pentium Pro and Pentium II OverDrive processors.
- **SODIMM (Small Outline Dual Inline Memory Module):**
These memory modules are typically used in laptop and notebook computers where space and low power consumption is a major consideration. SODIMM's are about half the size of its DIMM counterpart.
- **Software Modem:**
A modem implemented entirely in software. Software modems rely on the computer's processor to modulate and demodulate signals.
- **Source Code:**
Computer programs or operating systems are originally written by a human being in a programming language. This is called the source code of the software. To be actually used by a computer, the program has to be translated by the computer from the source code into the machine language that the computer understands and can execute. This translation process is referred to as compiling.
- **Software:**
This is a program, the actual code the computer reads. All other stuff is hardware. A floppy disc is hardware.

- **Spam:**
This is to transmit unwanted messages, usually over email, to a great many people.
- **Spoofing:**
To fool. In networking, the term is used to describe a variety of ways in which hardware and software can be fooled. Email spoofing, for example, involves trickery that makes a message appear as if it came from a legitimate business email address.
- **Spooling:**
The process of storing a device (eg: printer) output signal in a queue, while the device can take on other actions. When the device is ready to take on other actions, it will draw from the queue.
The term spooling is derived from the acronym "Spool": Simultaneous Peripheral Operations On-Line
- **SQL:**
(Structured Query Language) A specialized programming language for sending queries to databases. Most industrial-strength and many smaller database applications can be addressed using SQL. Each specific application will have its own version of SQL implementing features unique to that application, but all SQL-capable database support a common subset of SQL.
- **SRAM:**
Short for static random access memory, and pronounced ess-ram. SRAM is a type of memory that is faster and more reliable than the more common DRAM (dynamic RAM). The term static is derived from the fact that it doesn't need to be refreshed like dynamic RAM.

While DRAM supports access times of about 60 nanoseconds, SRAM can give access times as low as 10 nanoseconds. In addition, its cycle time is much shorter than that of DRAM because it does not need to pause between accesses. Unfortunately, it is also much more expensive to produce than DRAM. Due to its high cost, SRAM is often used only as a memory cache.

- **SSL: (Secure Sockets Layer)**
A protocol designed by Netscape Communications to enable encrypted, authenticated communications across the Internet. SSL is used mostly in communications between Web browsers and Web servers. URLs that begin with "https" indicate that an SSL connection will be used.
- **Static:**
As a web site term, this is used to describe a web page that is not interactive. The webmaster writes information to the source code of a web page and can only be changed by re-writing the source code. A visitor to the web page cannot manipulate its contents.
- **Steganography:**
This refers to a method of concealing data inside of data. The secret information can be hidden inside of an image or sound file so that a normal user would not know that it existed.
- **Streaming:**
A technology that involves the playing of audio or video files in real time over the Internet.
- **Subroutine:**
A procedure that performs a specific function; usually a process that may be needed several times or a routine that may be used in several different programs. For example, many subroutines have been created to parse URL-encoded data.
- **Subscriber Unit (SU):**
An alternate term for cable modem.
- **SuperFetch:**
A memory management technology in Windows Vista that is designed to launch applications more quickly by getting the most out of the available RAM (random access memory). SuperFetch has the ability to learn which applications you use most often so that it can pre-load them into memory.
- **SVGA:**
Stands for Super Video Graphics Adapter. It's a high level monitor.
- **Swap File:**
A swap file is an area on your hard disk used as virtual memory. It's called a swap file because virtual memory management software swaps data between it and main memory (RAM).

In the Windows Operating System, a temporary swap file can be configured only when the system needs it. In a Linux and Unix environment, permanent swap files are used which dedicate a certain portion of hard drive space.

- **Swap Space:**

Disk space used by the kernel as "virtual" RAM. It is slower than RAM, but because disk space is cheaper, swap is usually more plentiful. Swap space is useful to the kernel for holding lesser-used data and as a fallback when physical RAM is exhausted.

- **Switch:**

In networks, a device that filters and forwards packets between LAN segments. Switches operate at the data link layer (layer 2) of the OSI Reference Model and therefore support any packet protocol. LANs that use switches to join segments are called switched LANs or, in the case of Ethernet networks, switched Ethernet LANs.

A small lever or button. The switches on the back of printers and on expansion boards are called DIP switches. A switch that has just two positions is called a toggle switch.

Another word for option or parameter -- a symbol that you add to a command to modify the command's behavior.

- **Switching Hub:**

A high-performance hub, also called a "switching hub" that can recall what devices are connected to each port and transfer necessary data to the required port. Unlike the conventional hub, which sends data to every port.

- **Synchronize:**

Refers to two or more elements, events or operations programmed to occur at a predefined moment in time or place.

- **Synchronous:**

Synchronous can refer to: (1) A communications method that transmits a group of characters as a block of data rather than as individual characters. (2) A reference to the fact that two different data streams are tied, or synchronized, to a single reference clock. (3) Data transmitted in a time-division multiplexer.

- **Syntax:**

Grammatical structuring of data using a special code that defines how this special code is used to form words, phrases or any other allowable constraint.

- **System:**

A combination of the hardware, software, and firmware. A system typically consists of components (or elements) which are connected together in order to accomplish a specific function or set of functions.

- **TCP/IP:**

Acronym for Transmission Control Protocol/Internet Protocol, the suite of communications protocols used to connect hosts on the Internet. TCP/IP uses several protocols, the two main ones being TCP and IP. TCP/IP is built into the UNIX operating system and is used by the Internet, making it the de facto standard for transmitting data over networks. Even network operating systems that have their own protocols, such as Netware, also support TCP/IP.

- **Telnet:**

One of the TCP/IP Protocols. It allows a connection to another computer over dedicated phone lines.

- **Terabyte: (TB)**

2 to the 40th power (1,099,511,627,776) bytes. This is approximately 1 trillion bytes.
10 to the 12th power (1,000,000,000,000). This is exactly one trillion.

- **Terminal:**

This is what you look at when you're on the Internet. It's your computer screen.

- **Terminator:**

A device attached to the end-points of a bus network or daisy-chain. The purpose of the terminator is to absorb signals so that they do not reflect back down the line. Ethernet networks require a terminator at both ends of the bus, and SCSI chains require a single terminator at the end of the chain.

A character that indicates the end of a string. In the C programming language, the null character serves as a

terminator.

- **Terminal Emulation:**

This is an application that allows your terminal to act as a dumb terminal.

- **Thin Client:**

Typically, a Thin Client will have little or no software installed and does not receive its information through a hard drive but rather from servers in a network. Since a Thin Client assumes the presence of a file server, these systems cost considerably less than a fully loaded personal computer. The word "Thin" refers to the boot image that this type of system requires.

- **Thread:**

In online discussions, a series of messages that have been posted as replies to each other. A single forum or conference typically contains many threads covering different subjects. By reading each message in a thread, one after the other, you can see how the discussion has evolved. You can start a new thread by posting a message that is not a reply to an earlier message.

- **Throughput:**

The amount of data transferred from one place to another or processed in a specified amount of time. Data transfer rates for disk drives and networks are measured in terms of throughput. Typically, throughputs are measured in Kbps, Mbps and Gbps.

- **Time Constant:**

In electronics, this term refers to a measured amount of time that current or voltage rises or falls across a circuit.

- **Toggle:**

A function that allows a user to switch back and forth between an OFF and ON position.

- **Top Down Testing:**

Also known as "Bottom Up Testing". It exists as an incremental testing strategy to ensure that designs are correct from the very beginning. It starts by testing the user interface, while the lower hierarchy components functionality is simulated by a dummy procedure known as a "stub". The testing continues in this manner until all of the components have been tested.

- **Topology:**

In networking, this refers to the physical or logical arrangement of a network. Physical Topology would refer to the connecting of the cables and nodes and the Logical Topology would refer to how the information flows through the network.

- **Transceiver:**

Short for transmitter-receiver, a device that both transmits and receives analog or digital signals. The term is used most frequently to describe the component in local-area networks (LANs) that actually applies signals onto the network wire and detects signals passing through the wire. For many LANs, the transceiver is built into the network interface card (NIC). Some types of networks, however, require an external transceiver. In Ethernet networks, a transceiver is also called a Medium Access Unit (MAU).

- **Transfer Rate:**

The speed at which a disk drive can transfer information between its platters and your CPU. The transfer rate is typically measured in megabytes per second, megabits per second, or megahertz.

- **Transparent:**

Something that occurs without being known to the user.

- **Transistor:**

A device composed of semiconductor material that amplifies a signal or opens or closes a circuit. Invented in 1947 at Bell Labs, transistors have become the key ingredient of all digital circuits, including computers. Today's microprocessors contains tens of millions of microscopic transistors.

Prior to the invention of transistors, digital circuits were composed of vacuum tubes, which had many disadvantages. They were much larger, required more energy, dissipated more heat, and were more prone to failures. It's safe to say that without the invention of transistors, computing as we know it today would not be possible.

- **Trojan:**

A type of computer virus that is loaded into an unsuspecting user's system via a host program such as a free game. The Trojan can be programmed by the author to perform many actions once activated by the user. These

actions usually have malicious intent. The term "Trojan" comes from ancient Greece, where the Greeks used a wooden horse containing hidden Greek soldiers to gain entrance to the city of Troy.

- **True Color:**
Refers to any graphics device or software that uses at least 24 bits to represent each dot or pixel. Using 24 bits means that more than 16 million unique colors can be represented. Since humans can only distinguish a few million colors, this is more than enough to accurately represent any color image.
- **TTL (Transistor-Transistor Logic):**
A digital electronics term used to describe a class of integrated circuits derived from two transistors.
- **Turnkey System:**
A system that already contains all the components and programs required for operation. The vendor takes care of installation and configurations so all the user has to do is "turn the key" to begin using the system.
- **TWAIN:**
Stands for Technology Without An Interesting Name.
- **UDMA:**
A protocol developed by Quantum Corporation and Intel that supports burst mode [data transfer](#) rates of 33.3 MBps. This is twice as fast as the previous disk drive standard for PCs, and is necessary to take advantage of new, faster Ultra ATA disk drives.

The official name for the protocol is Ultra DMA/33. It's also called UDMA, UDMA/33 and DMA mode 33.

- **UNIX:**
This is an operating system developed by AT&T. It's big push is that it allows one [server](#) to service many different end users at one time.
- **Uploading:**
The process of [transferring files](#) from a local computer to a [remote computer](#), network or Web server. The usual method of uploading files is done using a File Transfer Protocol (FTP) Utility.
- **UPS:**
Uninterruptible [Power Supply](#). A backup power unit that provides continuous power when the normal power supply is interrupted. UPS systems can be stand-by, only supplying power when the regular supply is interrupted, or fulltime, relying on regular power and/or batteries to supply it while it supplies power to the protected device. A UPS is not necessary on most [computer systems](#), but can be important on systems that need to be up 24 hours a day, such as servers.

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- **Upstream:**
The data flowing from the Cable Modem to the CMTS.
 - **Upstream frequency:**
The frequency used to transmit data from the CM to the CMTS. Normally in the 5-42 MHz range for US systems and 5-65 MHz for European systems.
 - **URL:**
Stands for Universal Resource Locator. It's a fancy way of saying Internet Address.
 - **USB:**
Short for Universal Serial Bus, a new external bus standard that supports data transfer rates of 12 MBps (12 million bytes per second). A single USB port can be used to connect up to 128 peripheral devices, such as mice, modems, and keyboards. USB also supports Plug-and-Play installation and hot plugging.

Starting in 1996, a few computer manufacturers started including USB support in their new machines. Since the release of Intel's 440LX chipset in 1997, USB has become more widespread. It is expected to eventually completely replace serial and parallel ports.

- **User:**
Someone attached to a server or host.

- **Utility Program:**
A program developed to run within an Operating System to perform a specific service.
 - **V.90:**
A standard for 56-Kpbs modems approved by the International Telecommunication Union (ITU) in February, 1998. The V.90 standard resolves the battle between the two competing 56 Kbps technologies –X2 from 3COM and K56Flex from Rockwell Semiconductor. Both manufacturers have announced that their future modems will conform to V.90. In addition, most users who already purchased 56 Kbps modems will be able to apply a software upgrade to make their modems support V.90.
 - **VBScript:**
Based on the Visual Basic programming language. VBScript was developed by Microsoft as an answer for Netscape's JavaScript programming language. Like JavaScript, VBScript is embedded in to a web page where the script is interpreted and executed by a Web client. VBScript is often used as a replacement for DOS batch files. Programs written in VBScript will carry a .VBS extension.
 - **VDD:**
Stands for Virtual Device Driver.
 - **Veronica:**
Stands for Very Easy Rodent Oriented Net-wide Index to Computerized Archives. A [database](#) of menu names from a large number of Gopher [servers](#). A quick and easy way to search Gopher resources for information by keyword.
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- **VGA:**
Stands for Video Graphics Adapter. This is a lower level color monitor.
 - **Virtual Device Driver:**
In Windows systems, a special type of device driver that has direct access to the [operating system](#) kernel. This allows them to interact with system and hardware resources at a very low level. In Windows 95, virtual device drivers are often called VxDs because the filenames end with the .vxd extension.
 - **Virtual Environment:**
An [environment](#) that uses audio and video computer simulations.
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- **Virtual Machine:**
A self-contained operating environment that behaves as if it is a separate computer. For example, Java applets run in a Java virtual machine (VM) that has no access to the host operating system. This design has two advantages:

System Independence: A Java application will run the same in any Java VM, regardless of the hardware and software underlying the system.

Security: Because the VM has no contact with the operating system, there is little possibility of a Java program damaging other files or applications.
The second advantage, however, has a downside. Because programs running in a VM are separate from the operating system, they cannot take advantage of special operating system features.
 - **Virtual Memory:**
When applications call for more random access memory (RAM than is installed on a computer, the operating system will automatically use empty sectors on the hard drive to simulate more memory. However, when this action is performed, a great reduction in the systems performance will be noticed.
 - **Virtual Private Network (VPN):**
A [data](#) network that uses the public telecommunications infrastructure, but maintains privacy through the use of a tunneling protocol and security procedures. A VPN gives a company the same capabilities as a system of owned or leased lines to which that company has exclusive access. However, costs are much lower because the VPN uses the shared public infrastructure rather than exclusive line access.
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- **Virus:**
A program or piece of code that is loaded onto your computer without your knowledge and runs against your

wishes. Most viruses can also replicate themselves. All computer viruses are manmade. A simple virus that can make a copy of itself over and over again is relatively easy to produce. Even such a simple virus is dangerous because it will quickly use all available memory and bring the system to a halt. An even more dangerous type of virus is one capable of transmitting itself across networks and bypassing security systems.

- **VMS:**
Stands for Virtual Memory System
 - **VoIP:**
(Voice Over Internet Protocol) A network that allows for real-time conversation by sending digital voice information in the form of packets over the Internet rather than the traditional circuit-committed protocols used by public telephone networks.
 - **Voltage Regulator:**
A device which maintains constant voltage in an electrical line in case of brownout.
 - **VRAM:**
Video Random Access Memory. A kind of high-speed memory used for the computer's display. VRAM must be fast to keep up with the speed at which the screen is scanned. The VRAM in a [PC](#) is on a display adapter card. VRAM has two ports so it can send the data for text and images to memory and to the display at the same time.
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- **VRML:**
Stands for Virtual Reality Modeling Language. It's a form of application that gives a 3-D effect to pictures sometimes allowing you to "move" through them.
 - **VTAM:**
Virtual Telecommunications Access Method. The SNA software that runs on IBM mainframes and implements the functions of network control, network management interface, and SNA support for host based application programs.
 - **VxD:**
Virtual Device Driver
<operating system> A device driver under Windows 3.x/Windows 95 running as part of the kernel and thus having access to the memory of the kernel and all running processes as well as raw access to the hardware. VxD's usually have the filename extension .386 under Windows 3.x and .vxd under Windows 95. VxD's written for Windows 3.x can be used under Windows 95 but not vice versa.
 - **VxWorks:**
An Operating System developed by Wind River Systems. It is a real-time software development environment and a multitasking operating system similar to; QNX, Lynx, pSOS etc.. VxWorks uses the VRTX kernel.
 - **WWW:**
Short for World Wide Web.
 - **WAIS:**
Stands for Wide Area Information Servers. Searches large indexes of information on the Internet.
 - **Wait State:**
A brief delay added before a microprocessor executes an instruction, to allow time for slower memory chips or external devices to respond. A wait states may be one or more of the computer's clock cycles or may be timed differently. One wait state on each access of memory can make the processor up to 20% slower. With no wait state (called zero wait state) the processor will run faster.
 - **WAN:**
Wide Area Network - A network in which computers are connected to each other over a long distance, using telephone lines and satellite communications. See local area network (LAN).
 - **WAV:**
Stands for WAVeform sound format. Microsoft's format for encoding sound files.
 - **Weblog:**

(Same as blog) This is a publicly accessible personal journal for an individual. Similar to a personal diary, but shared over the web. The activity of updating a blog is "blogging" and someone who keeps a blog is a "blogger." Blogs are typically updated daily using software that allows people with little or no technical background to update and maintain the blog. Postings on a blog are almost always arranged in chronological order with the most recent additions featured most prominently.

- **Web Client:**

When using a web browser to display web pages hosted by a web server, your computer would be acting as a web client.

- **Web Server:**

A computer that runs specific software to serve web pages to the Internet.

- **White Papers:**

These are documents created to help guide you in the use of a particular piece of hardware or software. Usually some kind of extra or advanced help that is provided that goes beyond the normal manual or set of instructions for that product or item. White Papers can provide special or advanced instructions on special features or setup methods.

- **WiFi:**

Wireless Fidelity - Otherwise known as Wireless Networking, commonly using the 802.11b protocol. Hardware that displays the WiFi logo claims 802.11b compliance should interconnect seamlessly.

- **Wiki Software:**

An online application that allows users to add and edit web content.

- **Windows Media Player:**

Developed by Microsoft Corporation, this is an audio video player that can also handle MP3 files. The player also has the ability to store your favorite music, video, pictures and recorded TV. From this media player you can sync your media to your portable device. The Windows Media Player is made available for free.

- **WinFS:**

(Windows File System) WinFS is the code name for the next generation storage platform in Windows "Longhorn." Taking advantage of database technologies, Microsoft is advancing the file system into an integrated store for file data, relational data, and XML data. Windows users will have intuitive new ways to find, relate, and act on their information, regardless of what application creates the data. Also, "WinFS" will have built-in support for multi-master data synchronization across other Longhorn machines and other data sources. The platform supports rich managed Longhorn APIs as well as Win32 APIs.

- **WOL: (Wake-on-LAN)**

This technology is used to remotely wake up a sleeping or powered off PC over a network. When the system is turned off, the managed network adapter uses an alternate power source to monitor the network and watch for a wake-up packet from the server. Once it receives a packet, it alerts the system to power up and accept any maintenance task it is given.

Wake-on-LAN is a part of Intel's Wired for Management System and is a result of the Intel-IBM Advanced Manageability Alliance.

Wake-on-LAN is also called remote wake-up.

- **Workgroup:**

Persons sharing files and data between themselves.

- **Workstation:**

The computer attached to the Internet.

- **WPG:**

Stands for Word Perfect Graphics.

- **X2:**

A technology developed by U.S. Robotics (now 3COM) for delivering data rates up to 56 Kbps over plain old telephone service (POTS). It was long believed that the maximum data transmission rate over copper telephone wires was 33.6 Kbps, but X2 achieves higher rates by taking advantage of the fact that most phone switching stations are connected by high-speed digital lines. X2 bypasses the normal digital-to-analog conversion and sends the digital data over the telephone wires directly to your modem where it is decoded.

- **XML: (eXtensible Markup Language)**

Like HTML, XML is a markup language, but unlike HTML, it is not limited to Web documents. XML lets Web developers and designers create customized tags that offer greater flexibility in organizing and presenting information than is possible with the older HTML document coding system.

- **XMS:**
Stands for Extended Memory Specification, a procedure developed jointly by AST Research, Intel Corporation, Lotus Development, and Microsoft Corporation, for using extended memory and DOS's high memory area, a 64K block just above 1MB.
- **XSL (eXtensible Stylesheet Language):**
A formatting language standard that defines how the data fields in a XML document will be viewed by a browser.
- **ZIF Socket**
Zero Insertion Force socket. A special socket for plugging in integrated circuits easily. The socket can be opened with a small lever or screw; the chip is dropped in, then the socket is closed.
- **ZIP:**
Stands for Zone Information Protocol. This is an application that allows for the compression of application files.
- **Zune:**
"The Zune Experience". This is Microsoft's digital music entertainment platform. The whole experience is centered around "connectivity". Connection with your music library, friends, family and to other connected devices. This 30GB digital media player features wireless technology, a built in FM tuner and 3 inch screen. The device offers many ways in which you are able to customize your Zune Experience. You can create playlists, play home made music, share pictures and music between friends and with other Zune devices. Zune will also offer many accessories to enhance the experience such as:
- **Zune Car Pack:**
Has a built in FM transmitter with AutoSeek and a car charger.
- **Zune Home A/V pack:**
Has a AV output cable, Dock, sync cable, AC adapter and wireless remote for Zune Dock.
- **Zune Travel Pack:**
Has premium ear phones, dual connect remote, gear bag, sync cable and a AC adapter.
For more information, visit here:
<http://www.microsoft.com/presspass/press/2006/sep06/09-14ZuneUnveilingPR.msp>