Computer Operating System

Introduction
An operating system (OS) is a program that acts as an intermediary between a user of a computer and the computer hardware. The purpose of an operating system is to provide an environment in which a user can execute programs and help run peripheral devices, i.e. hardware, in somewhat of a convenient and efficient manner. Some of the basic functions of an operating system are:

1) Program Execution
2) Device Management (I/O operations)
3) File System Management
4) Memory Management (Resource Allocations)
5) Task Management
6) Security (Protection)

There are 3 different ways of interacting or interfacing with the computer and its OS. These are by command driven, menu driven or GUI (graphical user interface).

Some Operating Systems, With Advantages and Disadvantages

Microsoft Windows
Windows started life as Microsoft's take on a graphical user interface (GUI); pretty much copied from Apple Computer. Windows 3.0, Windows 3.1, and Windows 3.11 were the three earliest versions of Microsoft's Windows operating system, but these were not true stand alone operating systems. These were just shells working over DOS. Windows 95 is a major upgrade to Windows 3.1. This operating system is a true operating system and not an operating environment as were the 3.x version of Windows. Windows 95 does not require a separate version of DOS, although some DOS features are included for compatibility. One advantage of Windows 95 is its improved graphical user interface, which makes working with files and programs easier than earlier versions. Another advantage of Windows 95 is most programs run faster under it because it is written to take advantage of newer 32-bit processors and supports cooperative multitasking. Window 95 includes support for peer-to-peer networking and e-mail. Windows 95 does not include the tools for developing Internet Web pages and operating Web page server.

After some time, Microsoft came out with another operating system to upgrade Windows 95 - which was named Windows 98. Windows 98 is able to provide faster system startup and shutdown, better file management, support for a few multimedia technologies such as digital video disk (DVD) and Web TV. Windows 98's Internet integration allows for automatic delivery of Web pages to your computer and an optional Web page-like user interface. Like Windows 95, Windows 98 can run 16 and 32 bit software, which means it can run software designed for DOS and other versions of Windows. Windows 98 does come with excellent online help specifically designed to troubleshoot blunders with your hardware, operating system, and applications. It's called the Windows 98 Resource Kit Plus Tools Ampler. There are some disadvantages for Windows 98, it is easier for trashing or what we call hang compare to Windows 95.

Microsoft's Windows NT (for new technology), also referred to as NT, is a sophisticated graphical user interface operating system designed for client-server networks. Windows NT is a complete operating system but not an operating environment. The advantages of Windows NT, the capability of working with multiple CPUs using symmetric multiprocessing, preemptive multitasking and multithreading, it can support most major networking communications protocols, and Windows NT also includes the user and account system security. The
disadvantages of the Windows NT are it requires more disk space, memory, and the faster processors just for the tools for developing Internet web pages and operating system.

Microsoft’s most recent OS is Windows XP, both Professional and Home edition. The Professional edition has more built in security and remote management features than the Home edition. Some improved features include speed, security, better stability and compatibility and automated Windows updates. This helps against viruses and worms, or possible future problems. Some small disadvantages might include need current hardware with a fair amount of RAM and hard disk needed.

UNIX/LINUX
UNIX is a real operating system, where more than one person can run multiple applications, making it a multi-user and multitasking operating system. With UNIX, each user logs in using a login name. Optionally, the user must also supply a password. The password ensures that the person logging on with the user login name is really who she claims to be. If the computer is attached to a network, it has several other identifying items, including, but not limited to, a domain name and an IP address. UNIX will run on just about every platform made.

Linux is a full-fledged operating system. It provides full multitasking in a multi-user environment. It gives a high quality of software for a cost far lower than other commercial versions of Unix. There are many advantages of Linux, it is cheap, almost all the distributions are available in their entirety as free downloads via FTP. Linux is a low hardware requirements operating system. It can run on much more modest hardware than most other modern operating systems require. An old 486 with 16 megabytes of ram and 500 megabytes of hard drive space has plenty of capacity to host an intranet, including duties as firewall and print/AMTP/POP server for dozens of other computers. Linux will boot and run (with full graphical user interface) in less than 4 megabytes of ram, and 8 megabytes of ram is plenty for web surfing with Netscape. Linux is available under the GNU public license, which states that anyone is allowed to copy, distribute, and modify it. It's impossible to "pirate" a GNU program. Anyone and everyone is explicitly allowed to make and use as many copies as they need, without ever having to buy.

Macintosh
Apple computers solely use the Macintosh operating system. In 1983, Apple launched the Lisa, the first production computer to use a graphical user interface (GUI). Apple has never licensed it OS to any other hardware manufacturer. The Mac OS has always been known for its ease of use and great graphics. There are two distinct Mac operating systems in use: OS 9 and OS X (referred to as OS “ten”). Beneath the surface of Mac OS X lies an industrial-strength UNIX foundation hard at work to ensure that your computing experience remains free of system crashes and compromised performance. With its advanced virtual memory, you don’t have to concern yourself over the number of applications you have open — just continue working. If an application should ever crash, the system’s memory protection prevents it from taking the rest of the system down with it. And the time-tested security protocols in Mac OS X keep your Mac out of harm’s way.