operating system - OS

The ***o***perating ***s***ystem (***OS***) is the most important program that runs on a computer. Every general-purpose computer must have an operating system to run other programs and [applications](http://www.webopedia.com/TERM/A/application.html). Computer operating systems perform basic tasks, such as recognizing input from the [keyboard](http://www.webopedia.com/TERM/K/keyboard.html), sending output to the display screen, keeping track of files and directories on the storage drives, and controlling [peripheral devices](http://www.webopedia.com/TERM/P/peripheral_device.html), such as 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](http://www.webopedia.com/TERM/U/user.html) running at the same time do not interfere with each other. The operating system is also responsible for [security](http://www.webopedia.com/TERM/S/security.html), ensuring that unauthorized users do not [access](http://www.webopedia.com/TERM/A/access.html) the system.

## *A Software Platform for Applications*

Operating systems provide a [software](http://www.webopedia.com/TERM/S/software.html) [platform](http://www.webopedia.com/TERM/P/platform.html) on top of which other programs, called [application](http://www.webopedia.com/TERM/A/application.html) 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](http://www.webopedia.com/TERM/P/personal_computer.html), the most popular operating systems are DOS, [OS/2](http://www.webopedia.com/TERM/O/OS_2.html), and [Windows](http://www.webopedia.com/TERM/W/Windows.html), but others are available, such as [Linux](http://www.webopedia.com/TERM/L/Linux.html).


***Image: Operating System Diagram***

## *Classification of Operating systems*

 [**Multi-user**](http://www.webopedia.com/TERM/M/multi_user.html)**:** Allows two or more users to run programs at the same time. Some operating systems permit hundreds or even thousands of concurrent users.

 [**Multiprocessing**](http://www.webopedia.com/TERM/M/multiprocessing.html) **:** Supports running a program on more than one [CPU](http://www.webopedia.com/TERM/C/CPU.html).

 [**Multitasking**](http://www.webopedia.com/TERM/M/multitasking.html) **:** Allows more than one program to run concurrently.

 [**Multithreading**](http://www.webopedia.com/TERM/M/multithreading.html) **:**Allows different parts of a single program to run concurrently.

 [**Real time**](http://www.webopedia.com/TERM/R/real_time.html)**:** Responds to input instantly. General-purpose operating systems, such as [DOS](http://www.webopedia.com/TERM/D/DOS.html) and [UNIX](http://www.webopedia.com/TERM/U/UNIX.html), are not real-time.

## *User Interaction With the OS*

As a user, you normally interact with the operating system through a set of [commands](http://www.webopedia.com/TERM/C/command.html). For example, the DOS operating system contains commands such as COPY and RENAME for [copying](http://www.webopedia.com/TERM/C/copy.html) files and changing the [names](http://www.webopedia.com/TERM/N/name.html) of files, respectively. The commands are accepted and [executed](http://www.webopedia.com/TERM/E/execute.html) by a part of the operating system called the [command processor](http://www.webopedia.com/TERM/C/command_processor.html) or command line interpreter. [Graphical user interfaces](http://www.webopedia.com/TERM/G/Graphical_User_Interface_GUI.html) allow you to enter commands by pointing and [clicking](http://www.webopedia.com/TERM/C/click.html) at [objects](http://www.webopedia.com/TERM/O/object.html) that appear on the screen.

## *Most Popular Desktop Operating Systems*

The three most popular types of operating systems for personal and business computing include Linux, Windows and Mac.

### Windows

[Microsoft Windows](http://www.webopedia.com/TERM/M/Microsoft_Windows.html) is a family of operating systems for personal and business computers. Windows dominates the personal computer world, offering a graphical user interface (GUI), virtual memory management, multitasking, and support for many peripheral devices.

### Mac

Mac OS is the official name of the [Apple Macintosh operating system](http://www.webopedia.com/TERM/M/Macintosh_computer.html). Mac OS features a graphical user interface (GUI) that utilizes windows, icons, and all applications that run on a Macintosh computer have a similar user interface.

### Linux

[Linux](http://www.webopedia.com/TERM/L/Linux.html) is a freely distributed open source operating system that runs on a number of hardware platforms. The Linux kernel was developed mainly by Linus Torvalds and it is based on Unix.

According to Netmarketshare.com, the most used desktop operating system and versions used on PCs in July

# Folder

A [digital](https://techterms.com/definition/digital) folder has the same purpose as a physical folder – to store [documents](https://techterms.com/definition/document). Computer folders can also store other types of [files](https://techterms.com/definition/file), such as [applications](https://techterms.com/definition/application), archives, [scripts](https://techterms.com/definition/script), and libraries. Folders can even store other folders, which may contain additional files and folders.

Folders are designed for organizing files. For example, you might store your digital photos in a "Pictures" folder, your audio files in a "Music" folder, and your [word processing](https://techterms.com/definition/wordprocessor) documents in a "Documents" folder. In [Windows](https://techterms.com/definition/windows), software programs are installed by default in the "Program Files" folder, while in [OS X](https://techterms.com/definition/os_x) they are stored in the "Applications" folder.

Folders are also called [directories](https://techterms.com/definition/directory) because of the way they organize data within the [file system](https://techterms.com/definition/filesystem) of a [storage device](https://techterms.com/definition/storagedevice). All folders are subfolders, or [subdirectories](https://techterms.com/definition/subdirectory) of the [root](https://techterms.com/definition/root) directory. For example, in Windows, C:\ is the root directory of the startup disk. The Internet Explorer application is installed in the C:\Program Files\Internet Explorer directory, which is also the [directory path](https://techterms.com/definition/path) of the Internet Explorer folder.

While folders may contain several [gigabytes](https://techterms.com/definition/gigabyte) of data, folders themselves do not take up any disk space. This is because folders are simply pointers that define the location of files within the file system. You can view how much data is stored in a folder by right-clicking it and selecting Properties in Windows or Get Info in OS X. To create a new folder, right-click on the desktop or an open window and select New → Folder (Windows) or New Folder (OS X).

# File

A file is a collection of data stored in one unit, identified by a [filename](https://techterms.com/definition/filename). It can be a document, picture, audio or video stream, data library, [application](https://techterms.com/definition/application), or other collection of data. The following is a brief description of each file type.

Documents include text files, such as a Word documents, RTF (Rich Text Format) documents, [PDFs](https://techterms.com/definition/pdf), Web pages, and others. Pictures include [JPEGs](https://techterms.com/definition/jpeg), [GIFs](https://techterms.com/definition/gif), [BMPs](https://techterms.com/definition/bmp), and layered image files, such as Photoshop documents (PSDs). Audio files include [MP3s](https://techterms.com/definition/mp3), AACs, WAVs, [AIFs](https://techterms.com/definition/aiff), and several others. Video files can be encoded in [MPEG](https://techterms.com/definition/mpeg), MOV, WMV, or DV formats, just to name a few.

A library file is a unit of data that is referenced by a specific program or the operating system itself. These include plug-ins, components, scripts, and many others. An application is a program, or executable file. Programs such as Microsoft Internet Explorer and Apple iTunes are both applications, but are also files.

Files can be opened, saved, deleted, and moved to different [folders](https://techterms.com/definition/folder). They can also be transferred across network connections or [downloaded](https://techterms.com/definition/download) from the Internet. A file's type can be determined by viewing the file's [icon](https://techterms.com/definition/icon) or by reading the [file extension](https://techterms.com/definition/fileextension). If the file type is associated with a specific application, double-clicking the file will typically open the file within the program.