**MAC SYSTEM 2.0, 3.0 ,4.0**

**History**

The early Mac OS (simply named "System") is easily distinguished between many other operating systems from the same period because it does not use a command line interface; it was one of the first operating systems to use an entirely graphical user interface or GUI. It consists of two user-visible components: in addition to the system kernel, there is the Finder, an application used for file management that also displays the Desktop. The two files were contained in a folder directory labeled "System Folder", which contained other resource files, like a printer driver, needed to interact with the System.

**Other editions/updates**

System 1.0, 1.1, and 2.0 use a flat file system named Macintosh File System (MFS). The Finder provides virtual folders that could be used to organize files, but these are not visible from any other application and do not actually exist in the file system. System 2.0 added support for AppleTalk and the newly introduced LaserWriter to use it.

System 2.1 (Finder 5.0) introduced the HFS (Hierarchical File System) which has real directories. This version was specifically to support the Hard Disk 20 and only implements HFS in RAM; startup and most floppy disks remain MFS 400 K volumes.

System 3.0 (Finder 5.1) was introduced with the Mac Plus, officially implementing HFS, 800K startup drives, support for several new technologies including SCSI and AppleShare, and Trash "bulging" (i.e., when the Trash contains files, it gains a bulged appearance).

System 4.0 was released with the Mac SE and System 4.1 first shipped with the Macintosh II—these new machines required additional support for the first expansion slots, the Apple Desktop Bus (ADB), internal hard drives and, on the Mac II, lighter, color, larger displays and the first Motorola 68020 processor.

These releases can only run one application, except for desk accessories, at a time, though special application shells such as MultiMac or Switcher (discussed under MultiFinder) could work around this. Changes in early Macintosh operating systems are best reflected in the version number of the Finder, where major leaps are found between 1.x, 4.x, 5.x, and 6.x.

*Menu bar*

The menu bar was a new and revolutionary part of the OS. Similar to the one found on the Lisa OS, the Macintosh menu bar had 5 basic headers when on the desktop: The Apple menu, File, Edit, View, and Special. When in an application, the menus would change to better fit the application's uses.

While within the Finder, the Apple menu contained the "About the Finder" information, along with the desktop accessories. "File" had drop-downs such as Open, Eject, and Close. "Edit" had drop-downs for cutting, copying, and pasting. "Special" was responsible for managing the hardware and other system functions, and was always the rightmost entry on the menu bar in the Finder. In System 1, the menu had items related to emptying the Trash, cleaning up the desktop, and disk options. By System 6, the menu allowed the user to choose an alternate startup program to be run instead of the Finder at boot time; the feature was replaced in System 7 by the "Startup Items" folder in the System Folder.

*Desk accessories*

* Alarm Clock — This DA could be used just like an alarm clock, as the computer would beep, and the menu bar would flash when the alarm's set time was reached. It could also be used as an easier way to change/set the time and date on the computer. When opened, it would show the time and date set on the computer.
* Calculator — It was a basic calculator capable of addition, subtraction, multiplication, and division. It featured the basic 10 buttons for input.
* Control Panel — The control panel was used to adjust some of the settings on the computer. What made the original control panel unique from other Mac OS control panels was the intended absence of any text. This was chosen to demonstrate the graphical user interface. Representation was achieved by using symbols. It could be used to adjust settings such as volume, double click speed, mouse sensitivity, and desktop background. On the Macintosh 128K, Macintosh 512K, and the Macintosh Plus the screen brightness was controlled by a mechanical adjustment wheel beneath the screen.
* Key Caps — A DA used to show the layout of the original Macintosh keyboard. It did not show what happened when keys were pushed along with special characters (Command, Shift, Option).
* Note Pad — A note taking DA that would save text entered into it on the floppy disk. Multiple note pages could be written when using the folded corner symbol in the bottom left corner of the note page.
* Puzzle — It was a basic 1-15 slide puzzle, similar to the picture puzzle found in later versions of the Mac OS.
* Scrapbook — This DA was similar to a cut, copy, and paste library. In it, you could store text selections and photos which could then be transferred to other applications.

**Advantages**

1. Simple but powerful user interface: Both macOS and Windows have easy-to-use graphical user interface or GUI. But OS X offers a more straightforward approach to computing. Those who are accustomed with the GUI of iOS found in iPhone and iPad will find macOS somewhat familiar.

2. Fewer viruses and other security issues: One of the advantages of macOS is that it is considerably safer than Windows. Of course, some Apple loyalists would argue that Macs are completely invincible from viruses or malware. This is no longer true.

3. Seamless integration between OS and hardware: Apple is both a software developer and a device manufacturer. This means that they have optimised the macOS to work seamlessly with all of the hardware components of a Mac device. It also ensures that all hardware components work hand-in-hand.

4. Comes preloaded with productivity apps: Standard Windows OS usually does not come with Microsoft Office Suite. Both are sold separately most of the time. In addition, new Windows-based laptop and desktop computers come with random software or apps that merely bloat the entire system and external storage.

5. Effective and unparalleled multitasking feature: Multitasking is another notable advantage of macOS. Mac computers have hardware specifications designed for multitasking. And because macOS integrates seamlessly with Mac hardware components, the overall operation is smooth and responsive.

6. Integration with other Apple products: One of the strengths of Apple is that most of the products under the brand are completely integrated. The iPhone or iPad works best with a Mac computer. This advantage of macOS is exclusive for Apple users—or those individuals with several Apple devices.

**Disadvantages**

1. Mac computers are considerably expensive: The fact remains that Apple sells expensive computers whether it is the new MacBook Pro with Retina or a Mac Mini. This is more noticeable when comparing the price point of Mac computers with their Windows counterpart.

2. Inflexible when it comes to hardware upgrades: A standard Mac computer cannot be upgraded easily because most of its hardware components are integrated both at a design and engineering levels. This is a macOS disadvantage that is unacceptable for hobbyists.

3. Lack of game titles and advanced gaming experience: There are more game titles available for Windows than in macOS. This is another noteworthy disadvantage of macOS. Some titles from independent producers that have gained large following are unavailable for Mac computers.

4. App ecosystem is still lacklustre: Windows has more software or applications. Developers, especially small and independent software companies, often consider building software for Windows first because of greater reach.