

Operating systems components

- **Kernel** - With the aid of the firmware and device drivers, the kernel provides the most basic level of control over all of the computer's hardware devices.
- **Program execution** - The operating system provides an interface between an application program and the computer hardware.
- **Interrupts** - Provide an efficient way for the operating system to interact with and react to its environment.
- **Modes** - Controlled access to system resources.
- **Memory management** - Managing all system memory which is currently in use by programs.
- **Virtual memory** - Allows the operating system to use the same memory locations for multiple tasks.
- **Multitasking** - Running of multiple independent computer programs on the same computer.
- **Disk access and file systems** - Access to data stored on disks.
- **Device drivers** - Allows interaction with hardware devices.
- **Networking** - Sharing resources such as computing, files, printers, and scanners using either wired or wireless connections.
- **Security** - Distinguishing between requests which should be allowed to be processed, and others which should not be processed.
- **User interface** - Usually referred to as a shell and is essential for human - computer interaction.

Popular Operating Systems

macOS

A proprietary graphical operating system developed and marketed by Apple since 2001. It is the primary operating system for Apple's Mac computers and often unofficially run on non-proprietary hardware configurations known as a "hackintosh".

Specs:	
OS family	Unix, Darwin
Kernel type	Hybrid (XNU)
Default user interface	Aqua
Source model	Closed



macOS is a Unix-like operating system written in C, C++, Objective-C, Swift and assembly language. Because macOS is POSIX compliant, many software packages written for the other Unix-like systems including Linux can be recompiled to run on it, including much scientific and technical software.

macOS is the successor to OS X which was originally developed for the PowerPC platform but later ported to Intel's x86 instruction set architecture. As of the release of macOS Big Sur, the operating system can also be run on ARM64 processors which drastically improves performance, power efficiency and compatibility with Apple's mobile operating systems.