

Key vocab

Operating System	(OS) A collection of programs that tell the hardware what to do. They are necessary on most computer systems, other than simple self-booting systems devoted to a single task.
Kernel	A part of the operating system that connects applications to the hardware. Applications do not have direct control over hardware.
User interface	A system for providing a means of communication between the user and the operating system. Sits above the kernel.
Batch file	A file that contains a series of command line instructions.
DLL	Dynamic Linked Library
Library	A series of instructions and commands available to a programmer.
Firmware	Software that is permanently stored on a device using a ROM device.
Multi-Tasking	If a current program is loading data from a slow peripheral, rather than allow the CPU to stand idle it will turn its attention to another process. Often used to run several programs at one time.
Multi-User OS	An operating system that allows many users to log into the same system simultaneously.
Real time OS	Safety-critical systems that require a short and guaranteed response, such as in a nuclear power plant.
Scheduling	The process of arranging, controlling and optimising commands within the CPU.
User management	A set of controls that allow the access and actions of users to be restricted.
Memory Management	Operating system ensures that all data is stored safely and efficiently in the correct location.
Paging	Splitting programs into equal sized pages to fill available blocks in memory.
Segmentation	Splitting programs into blocks to fill available blocks in memory.
Driver	A program that controls a peripheral device.
Peripheral Management	Managing the communication through signals between a device and its driver.

Roles of an operating system

Managing hardware & peripherals
Managing programs installed and being run
Managing data transfer between memory locations, the CPU and secondary storage
Providing the interface between the hardware and the applications
Providing an interface between the computer and user, managing display to the screen
Managing security and organising data so that it is not overwritten
Providing a file system for the storage and retrieval of files

User interfaces

Command Line	Commands are given to the operating system through using text. Normally used by technicians as it can provide powerful instructions quickly.
Graphical User Interface (GUI)	The use of small icons that represent applications and actions that are performed to reduce the need to learn commands.
Voice Input	Mainly used on mobile devices to provide voice input to a computer system.

Typical operating systems

Android	Developed by Google to run on mobile devices, based on Linux.
Mac OS	Apple's mobile device operating system used on iPhones, iPads and Apple TV.
Unix	A widely used platform for building alternative operating systems above including MAC OS X and Linux.
Linux	Available in many distributions, Linux is an open source operating system based on Unix.
Mac OS X	Operating system on Apple computers based on Unix.
Windows	Most commonly used operating system developed by Microsoft. Windows is used on laptop and desktop PCs and on a range of devices.