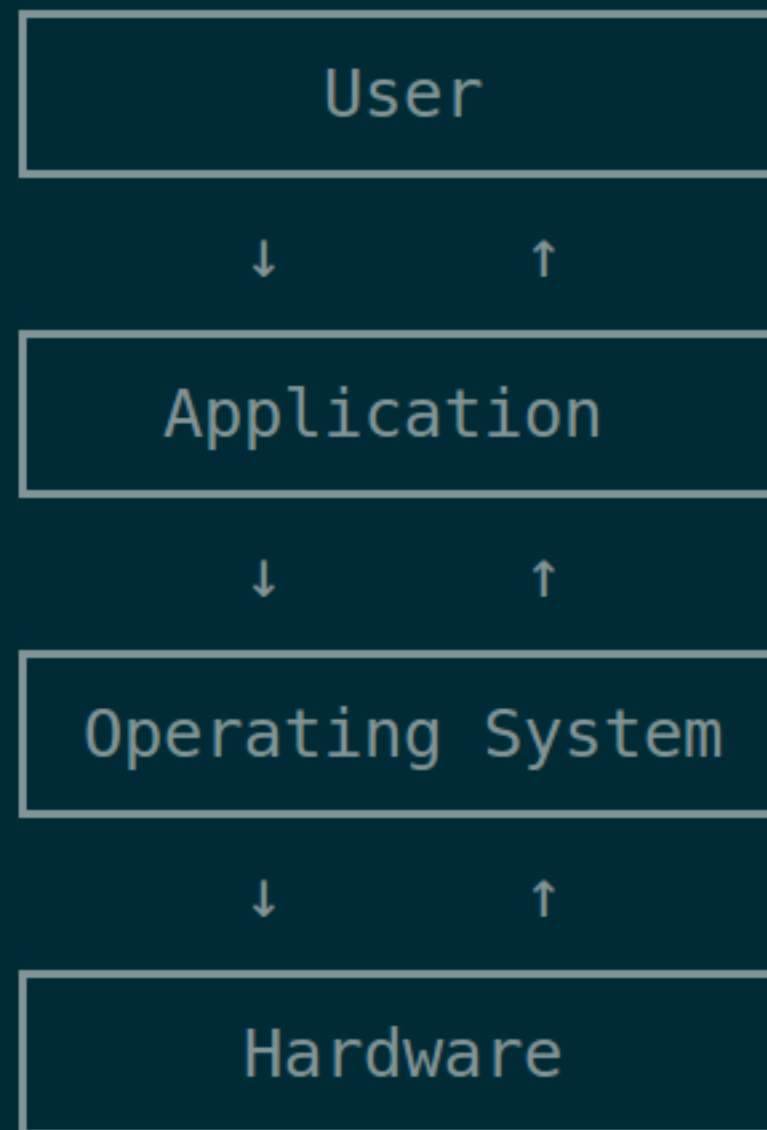


An operating system (OS) is system software that

- manages computer hardware and software resources,
- provides common services for computer programs.

All computer programs (excluding firmware) require an OS to function.

Reference:



Reference:

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The kernel is a computer program that is the core of a computer's operating system, with complete control over everything in the system.

- monolithic kernel (speed)
- microkernel (modularity)
- hybrid kernels
- nanokernel \cong picokernel
- exokernel

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- 1950s: basic OS features (monitoring)
- 1960s: modern and more complex features
 - runtime libraries
 - interrupts
 - parallel processing
- 1980s: personal computers

Reference:

"minimalist, modular software development"

Write programs

- that do one thing and do it well,
- to work together,
- to handle text streams (universal interface).

Peter H. Salus, 1994



Reference:

$$\frac{\sim}{\backslash} \frac{|}{/} \frac{||}{|} \frac{|}{/} \frac{|}{|} . \frac{-}{-} \frac{-}{-}$$

- true preemptive multitasking,
- virtual memory,
- shared libraries,
- demand loading,
- shared copy-on-write executables,
- memory management,
- the Internet protocol suite and
- threading.

Reference:

$$\begin{array}{|c|c|c|c|} \hline | & | & & | \\ \hline | & | & | & | \\ \hline | & | & | & | \\ \hline \end{array} \begin{array}{c} \cdot \\ \times \end{array} \begin{array}{|c|c|c|c|} \hline | & | & | & | \\ \hline | & | & | & | \\ \hline | & | & | & | \\ \hline \end{array}$$
[illegible]

Reference:

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Nobody really knows what the Bourne shell's grammar is.
Even examination of the source code is little help.
Tom Duff (rc shell, Version 10 Unix and Plan 9)



