

UNIX SYSTEMS PROGRAMMING



By

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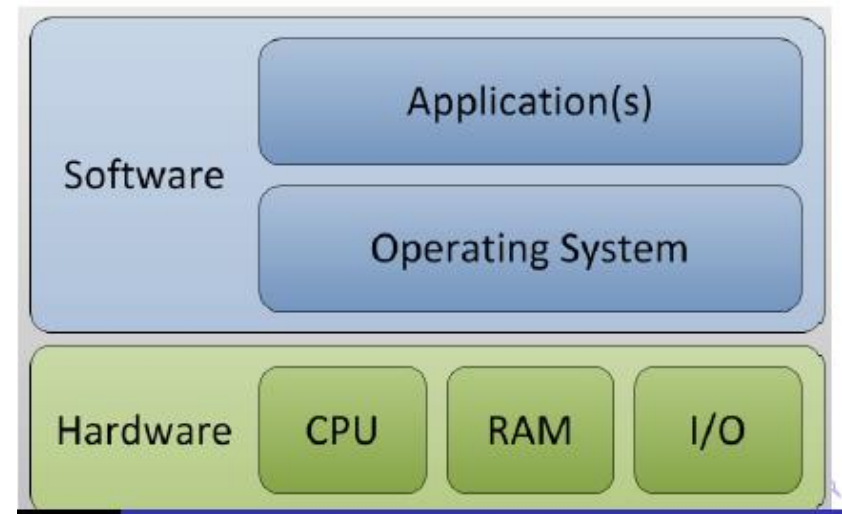
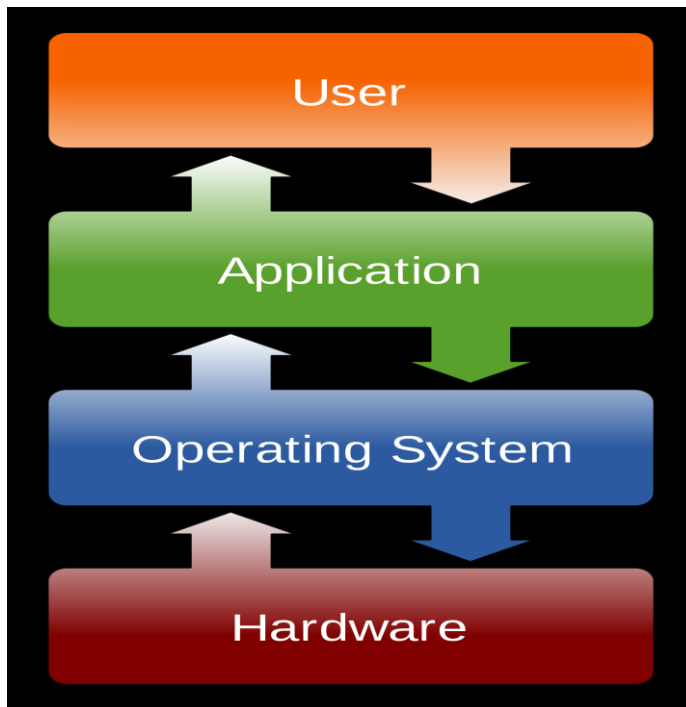
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Today's Agenda

- Operating System
- Evolution of UNIX
- UNIX System Structure
- Layers of UNIX System
- Kernel Position

Operating System

- An operating system (OS) is system software that manages computer hardware and software resources and provides common services for computer programs.

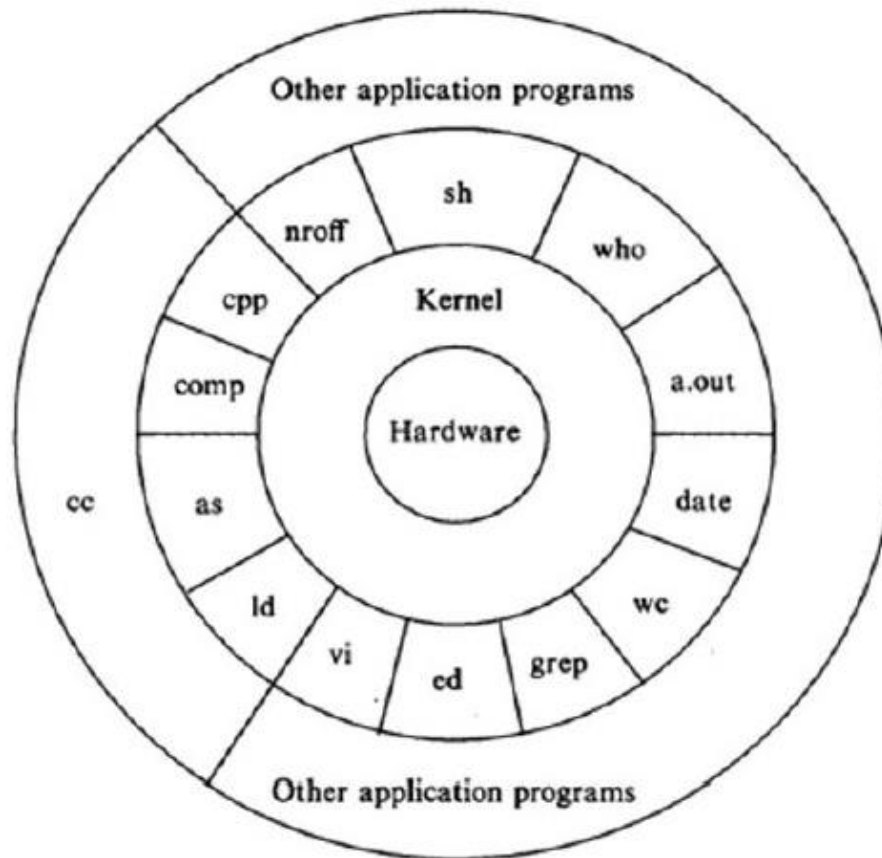


Evolution of Unix

- Unix is a family of multitasking, multiuser computer operating systems that derive from the original AT&T Unix, development starting in the 1970s at the Bell Labs research center by Ken Thompson, Dennis Ritchie, and others.
- Developer: Ken Thompson, Dennis Ritchie, Brian Kernighan, Douglas McIlroy, and Joe Ossanna at Bell Labs
- Initial release date: 3 November 1971
- License: Varies; some versions are proprietary, others are free/open-source software
- Default user interface: Command-line interface and Graphical
- Written in: C, Assembly language

System Structure

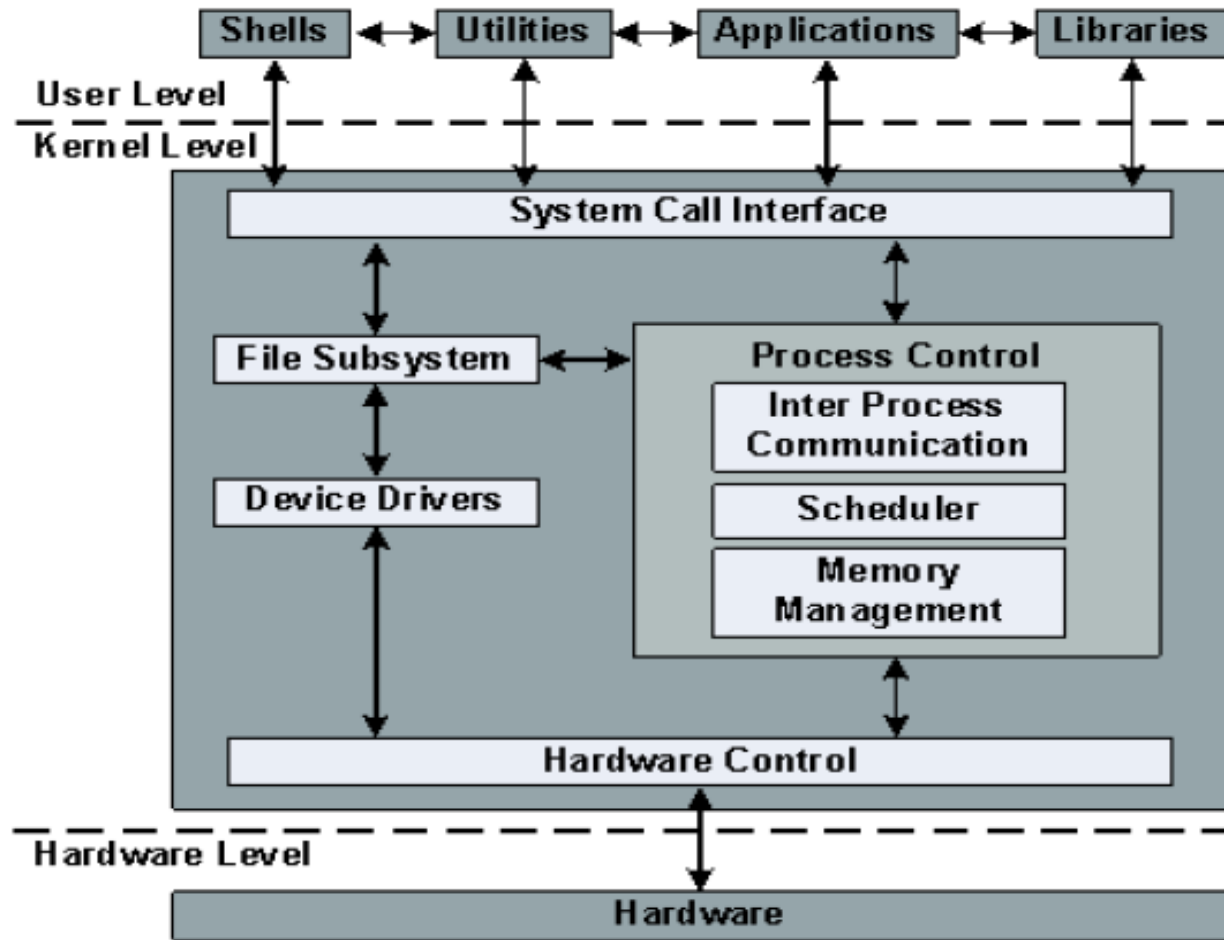
- The high-level architecture of the unix system:



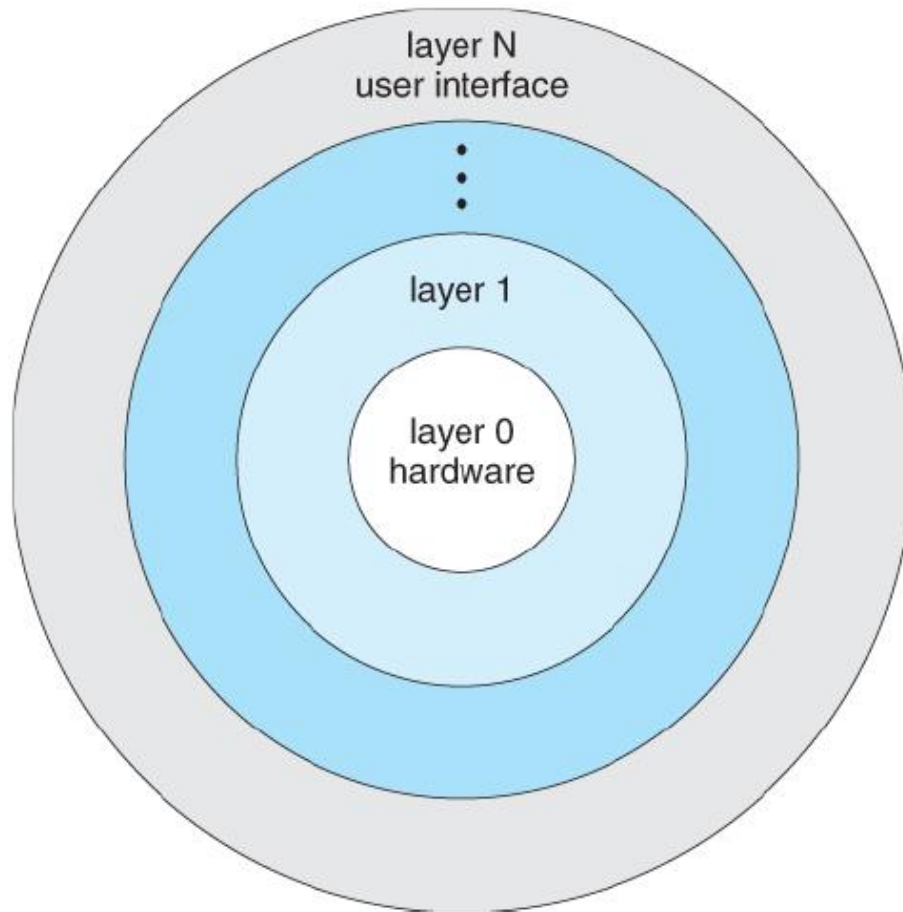
Description of the High-level architecture

- The hardware at the center of the diagram provides the operating system with basic services.
- The operating system interacts directly with the hardware, providing common services to programs.
- The operating system is commonly called the **system kernel**, or **kernel**, emphasizing its isolation from user programs.
- The user programs are independent of the underlying hardware.
- It is easy to move user programs between UNIX systems running on different hardware if the programs do not make assumptions about the underlying hardware.

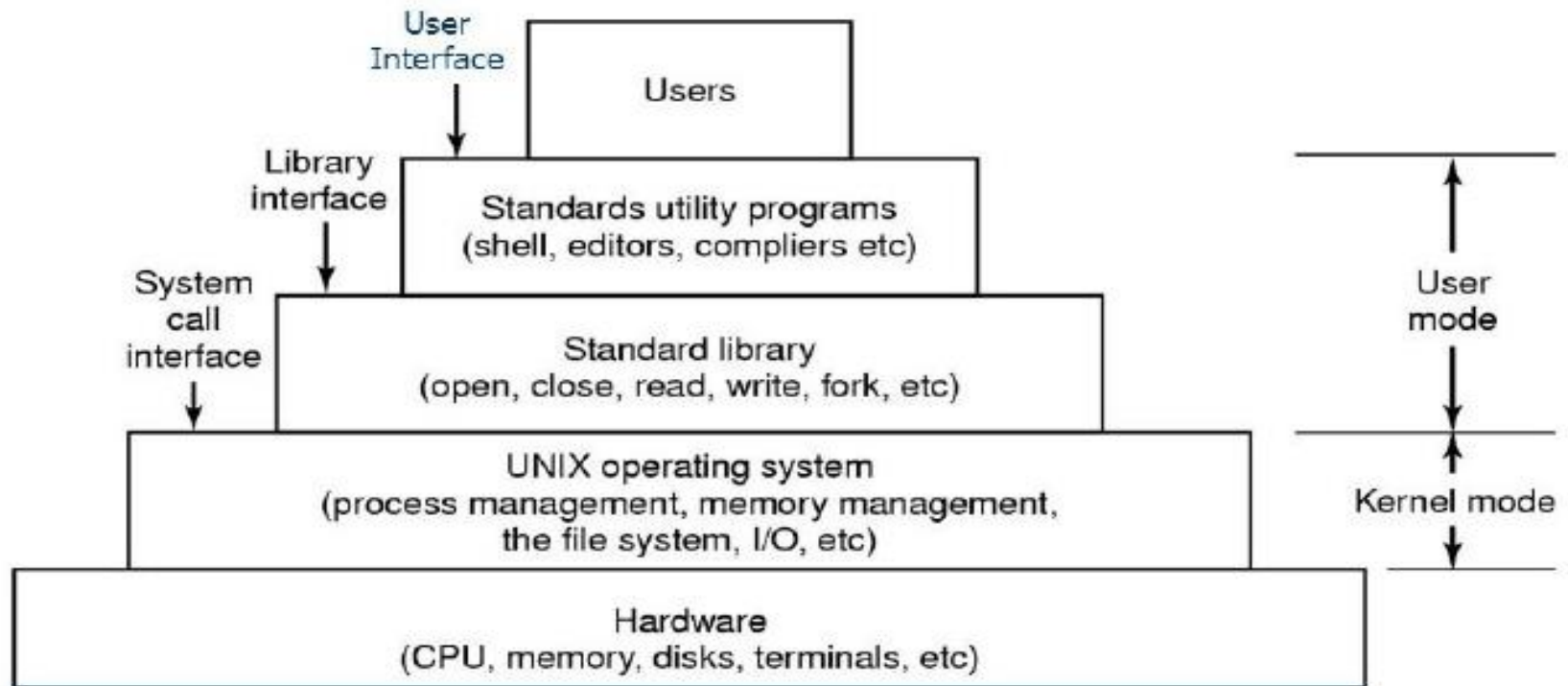
System Structure



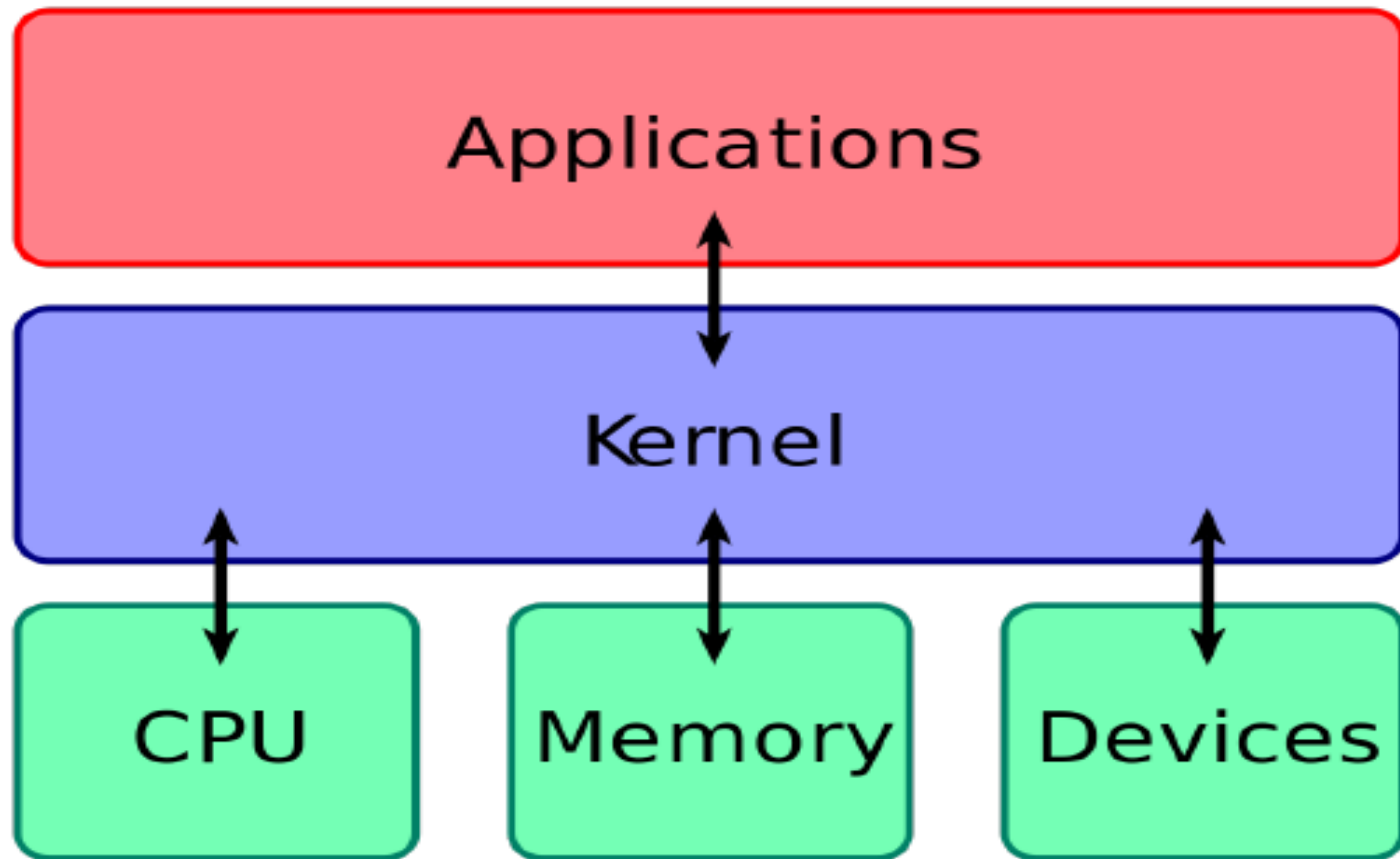
Unix as Layered Architecture



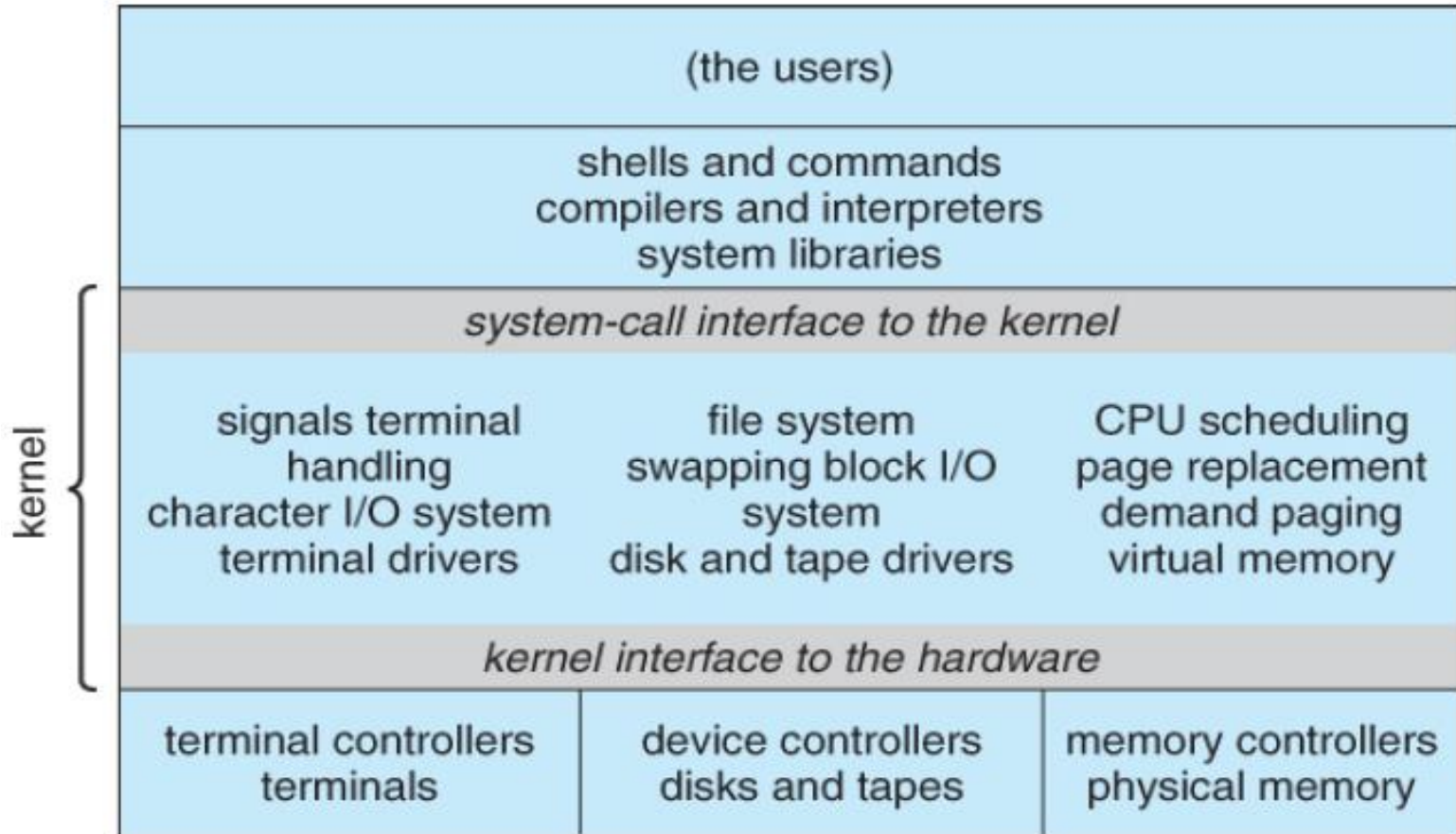
Layers of a UNIX System



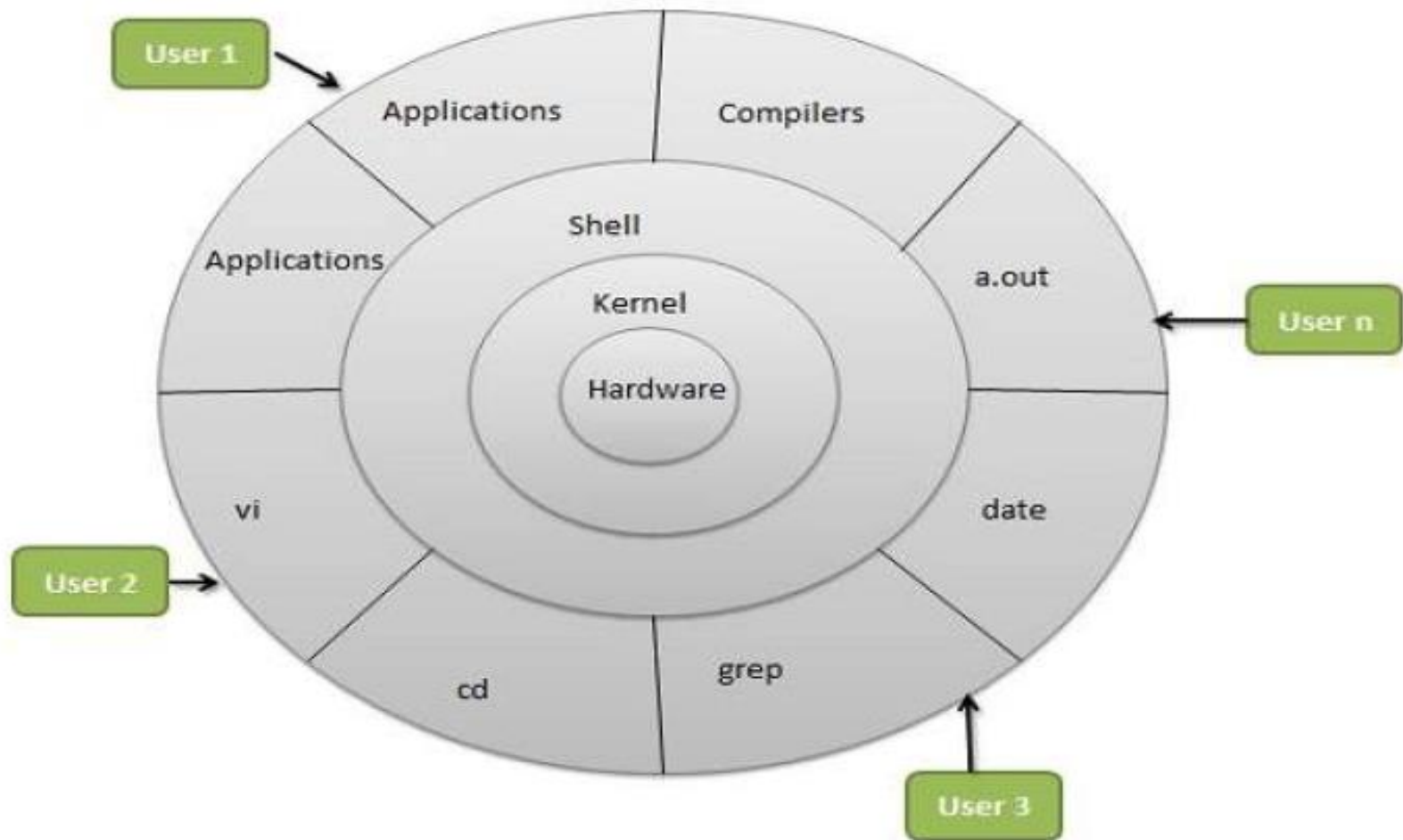
The Kernel Position



OS Structure



The Unix System Simplified



THANK YOU