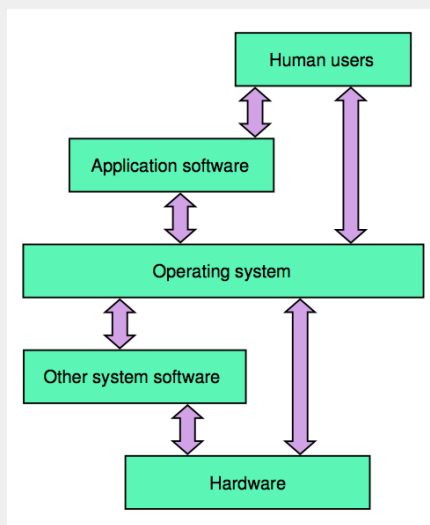## Roles of an OS

Application software	Programs that help us solve real-world problems
Systems software	Programs that manage a computer system and interact with hardware
Operating system	System software that manages computer resources and provides an interface for system interaction

Interaction

The operating system in its relative position among computer system elements.

Memory, Process, and CPU Management

Multiprogramming	The technique of keeping multiple programs in main memory at the same time, competing for the CPU
Memory management	The act of keeping track of how and where programs are loaded in main memory
Process	The dynamic representation of a program during execution
Process management	The act of keeping track of information for active processes
CPU scheduling	The act of determining which process in memory is given access to the CPU so that it may execute
Timesharing	A system in which CPU time is shared among multiple interactive users at the same time
Virtual machine	The illusion created by a timesharing system that each user has a dedicated machine

Memory, Process, and CPU Management (cont)

Mainframe	A large, multi-user computer often associated with early timesharing systems
Dumb terminal	A monitor and keyboard that allow the user to access the mainframe computer in early timesharing systems

Memory Management

Logical address	A reference to a stored Logical address value relative to the program making the reference
Physical address	An actual address in the main memory device
Address binding	The mapping from a logical address to a physical address