



OPERATING SYSTEM

Interview Prep | Online | Coding Blocks

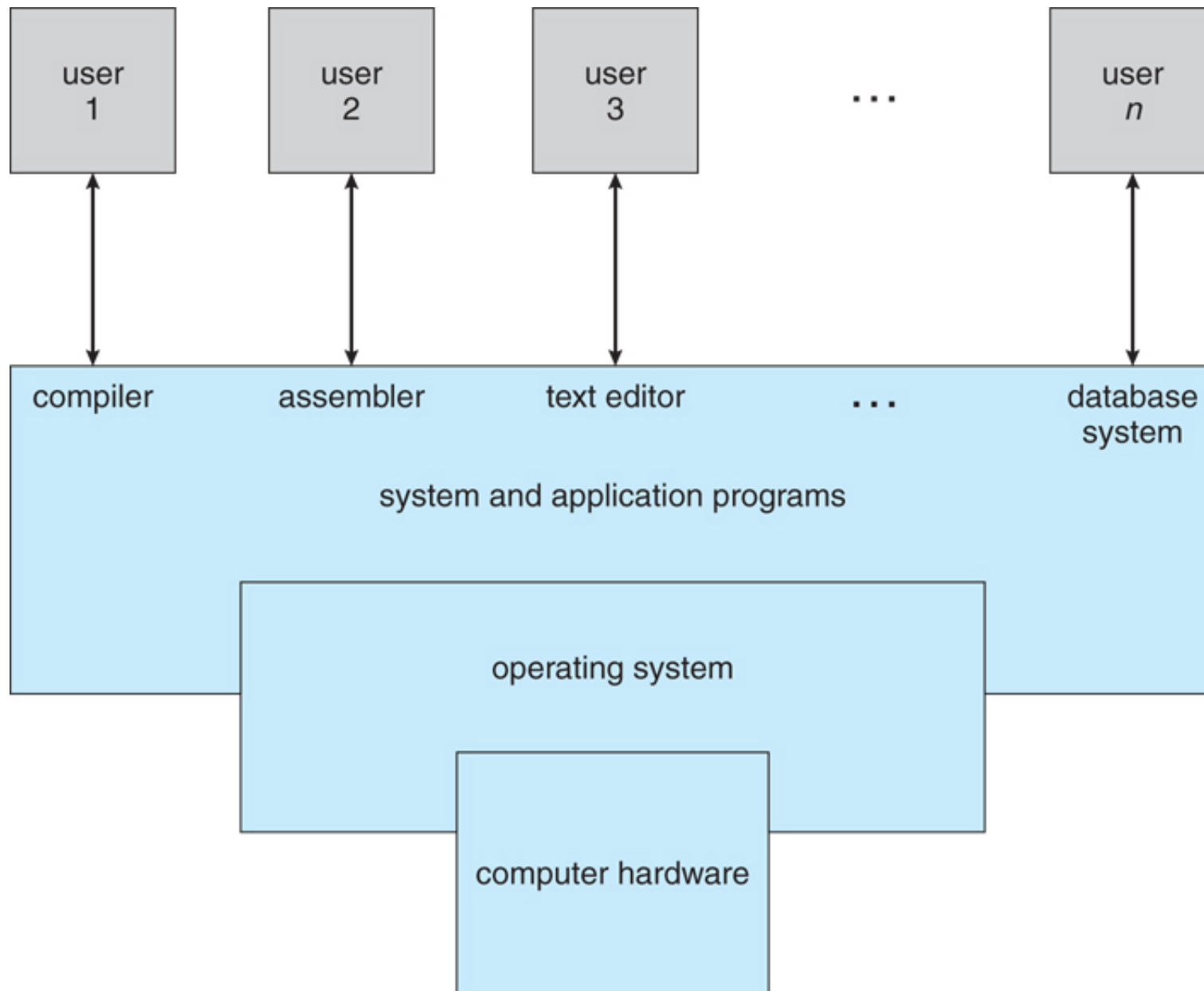


What is an operating System ?

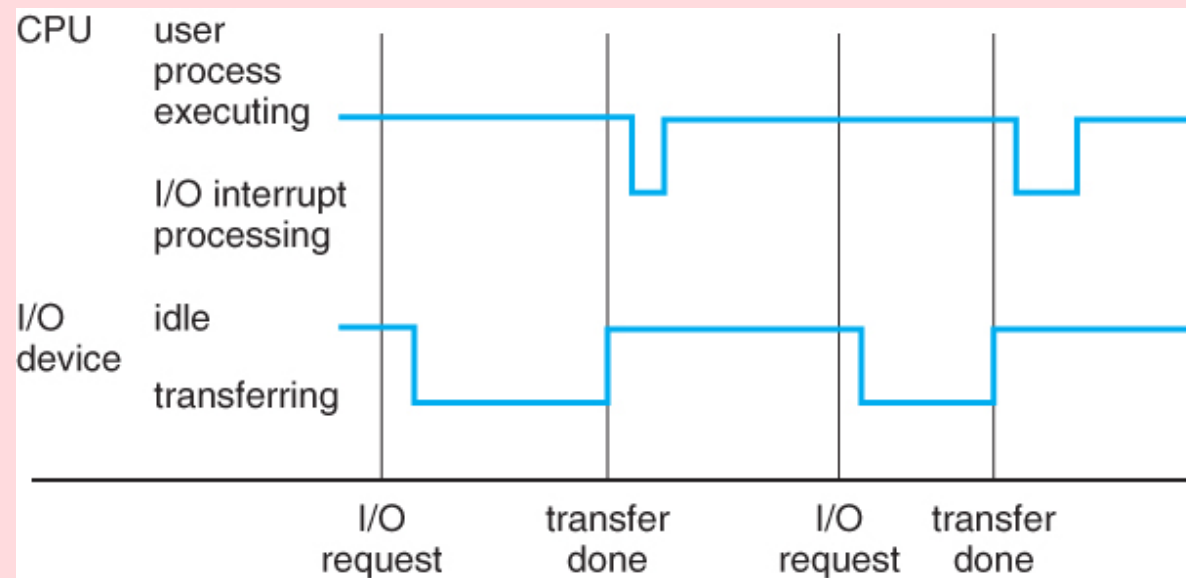
- Just another software
- Directly runs on the hardware
- Controls Process scheduling, memory management and I/O,
- Provides a platform for applications to run on it

Components of OS

- Kernel
- Hardware Drivers
- System Utilities

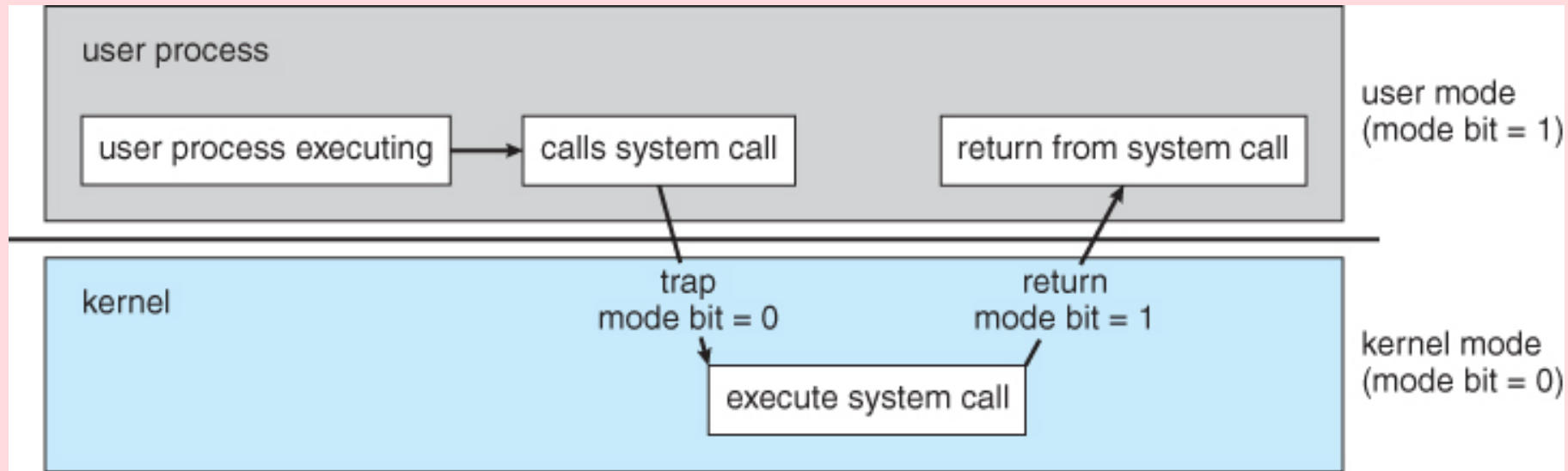


INTERRUPT DRIVEN OPERATION

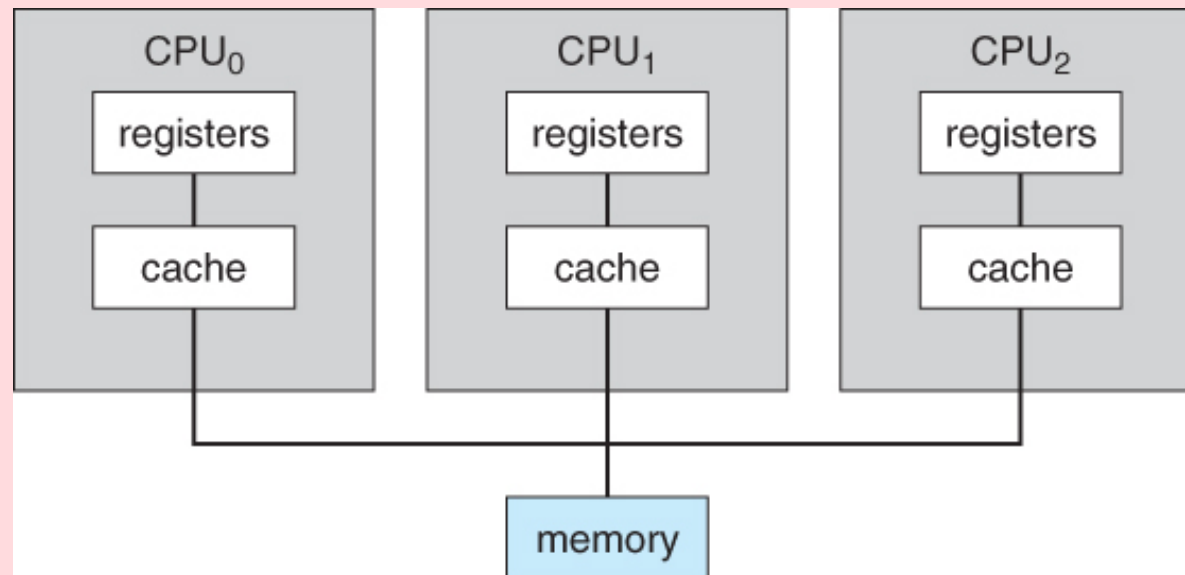


Interrupt

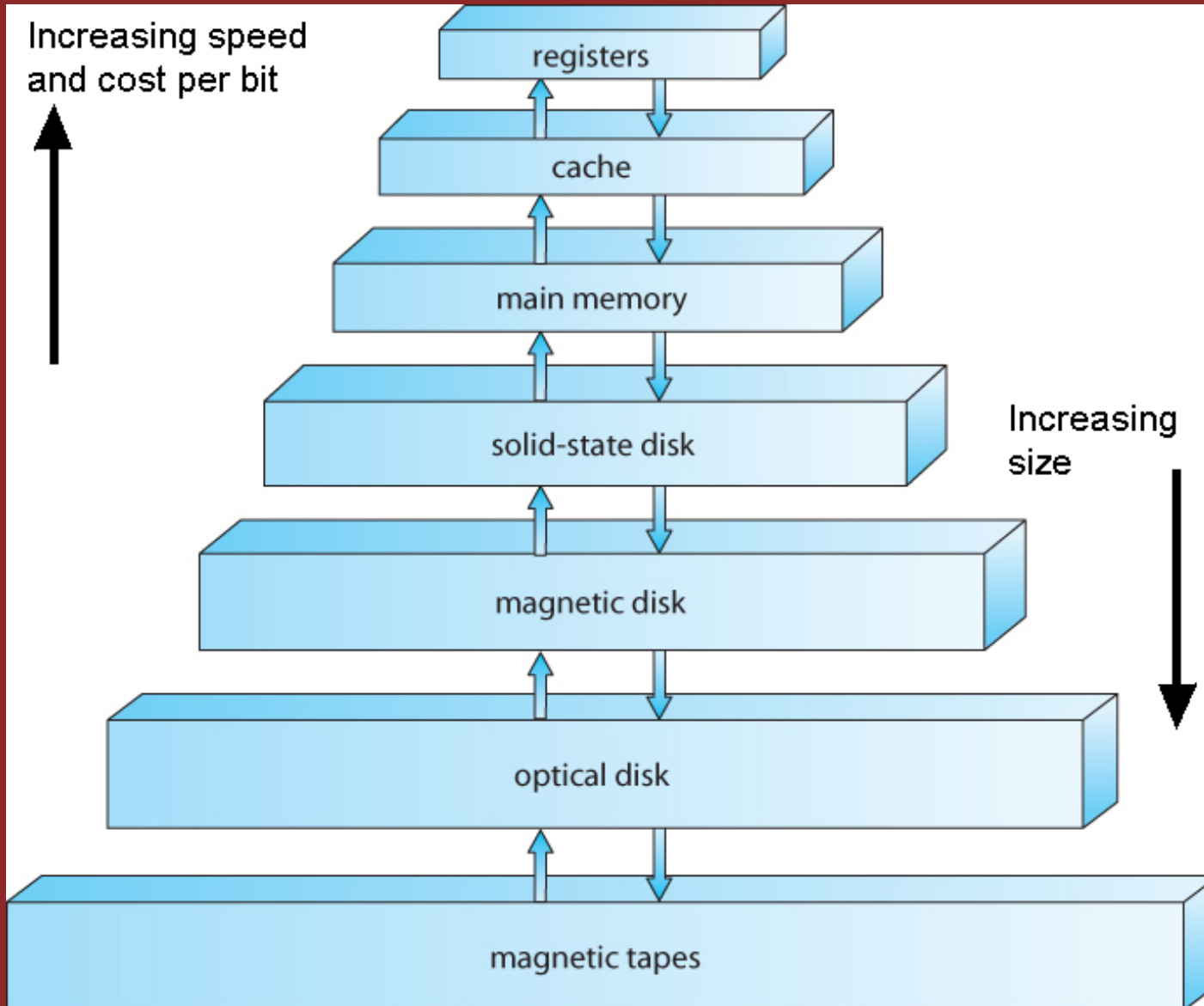
- Event that needs immediate operation
- Current state is saved, process is paused, and interrupt is handled
- After interrupt is handled, pre-existing process is resumed
- Interrupts are handled priority-wise



DUAL MODE OPERATION



MEMORY MANAGEMENT



MEMORY HIERARCHY

Comparison of Memory Devices

Level	1	2	3	4	5
Name	registers	cache	main memory	solid state disk	magnetic disk
Typical size	< 1 KB	< 16MB	< 64GB	< 1 TB	< 10 TB
Implementation technology	custom memory with multiple ports CMOS	on-chip or off-chip CMOS SRAM	CMOS SRAM	flash memory	magnetic disk
Access time (ns)	0.25 - 0.5	0.5 - 25	80 - 250	25,000 - 50,000	5,000,000
Bandwidth (MB/sec)	20,000 - 100,000	5,000 - 10,000	1,000 - 5,000	500	20 - 150
Managed by	compiler	hardware	operating system	operating system	operating system
Backed by	cache	main memory	disk	disk	disk or tape