I/O system calls encapsulate device behaviors in generic classesDevice-driver layer hides differences among I/O controllers from kernelNew devices talking already-implemented protocols need no extra workEach OS has its own I/O subsystem structures and device driver frameworksDevices vary in many dimensionsCharacter-stream or blockSequential or random-accessSynchronous or asynchronous (or both)Sharable or dedicatedSpeed of operationread-write, read only, or write only