Read Ahead

Many file systems implement "read ahead"

- FS predicts that the process will request next block
- FS goes ahead and requests it from the disk
  - This can happen while the process is computing on previous block
  - Overlap I/O with execution
  - When the process requests block, it will be in cache
  - Compliments the disk cache, which also is doing read ahead

✓ For sequentially accessed files can be a big win

- Unless blocks for the file are scattered across the disk
- File systems try to prevent that, though (during allocation)

File Sharing

File sharing has been around since timesharing

- Easy to do on a single machine
- PCs, workstations, and networks get us there (mostly)

➡ File sharing is important for getting work done (basis for communication and synchronization)

◉ Two key issues when sharing files

1. Semantics of concurrent access
    - What happens when one process reads while another writes?
    - What happens when two processes open a file for writing?
    - What are we going to use to coordinate?
2. Protection