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