OS CONCEPTS

Module 1.4

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KEY CONCEPTS

- Processes
  - Active elements of system
  - "Program in execution"
  - May also be operated on as a passive element
- Files
  - Passive elements of system
  - Usual storage containers
  - Directories
  - Devices

PROCESSES

- Key concept in all operating systems
- Definition: a program in execution
- Process is associated with an address space
- Also associated with set of resources
- Process can be thought of as a container
  - Holds all information needed to run program
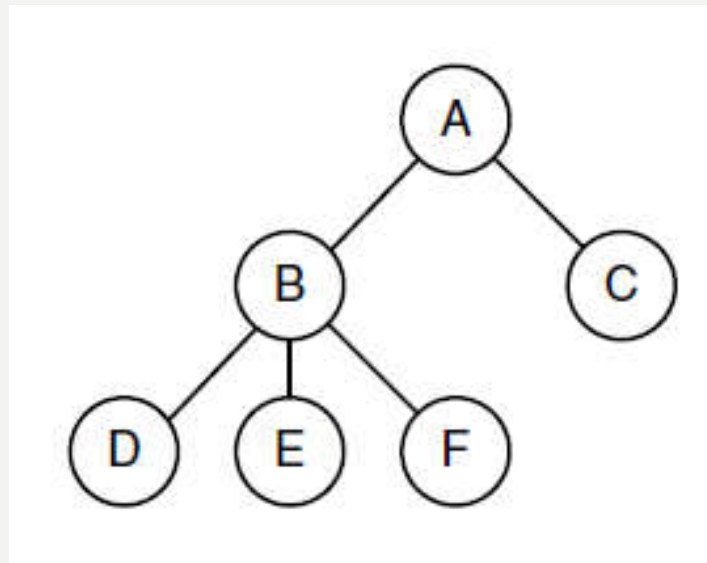
PROCESSES TREE

Figure 1-13. A process tree. Process A created two child processes, B and C. Process B created three child processes, D, E, and F.
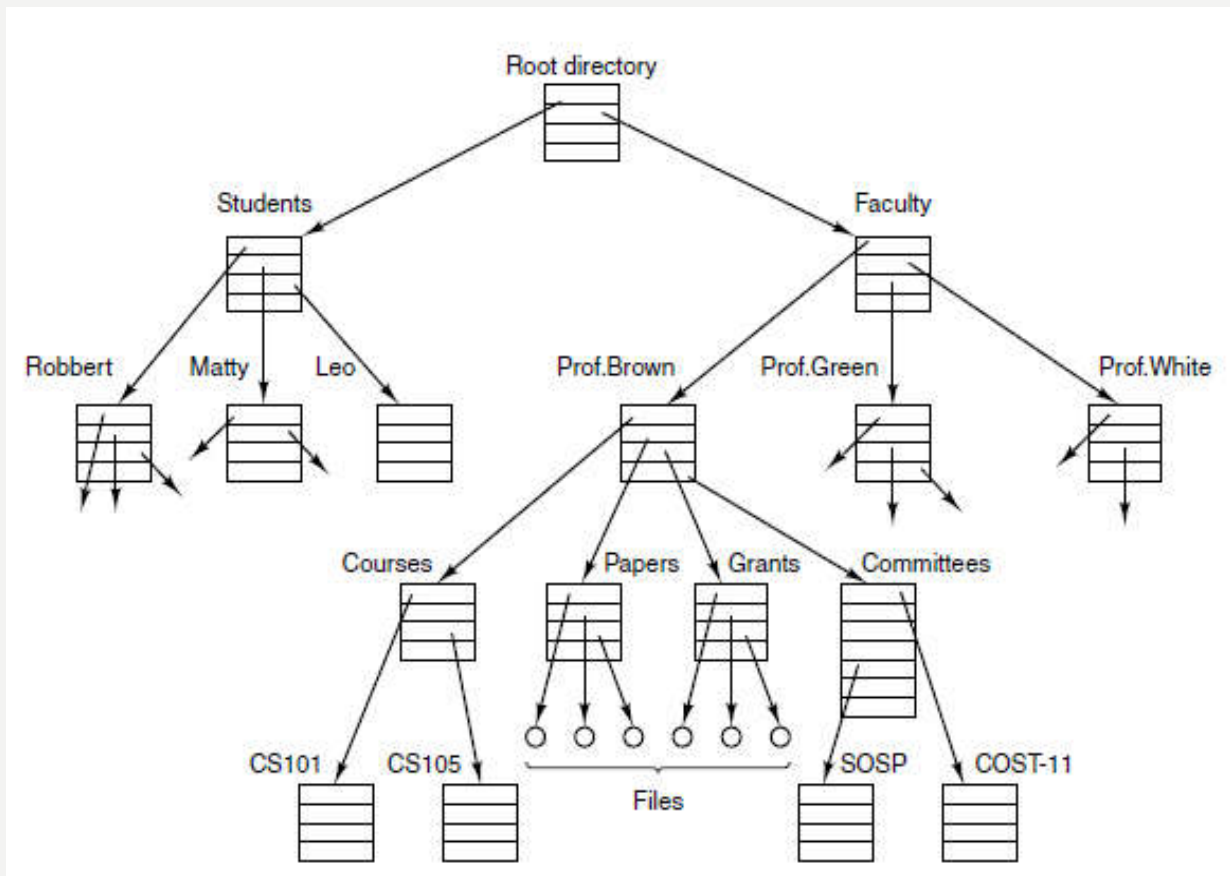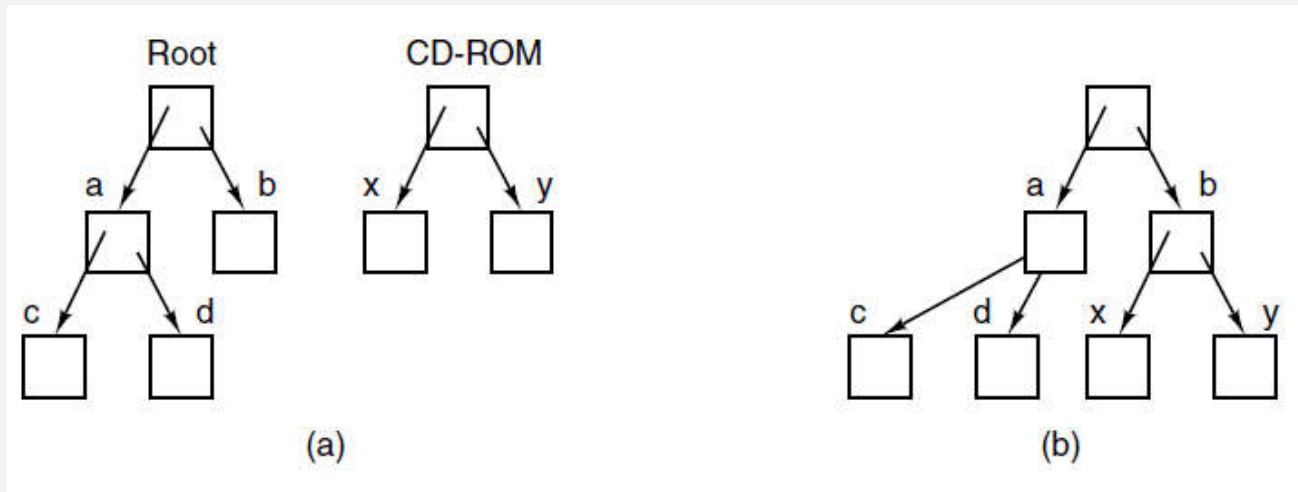
FILE SYSTEM

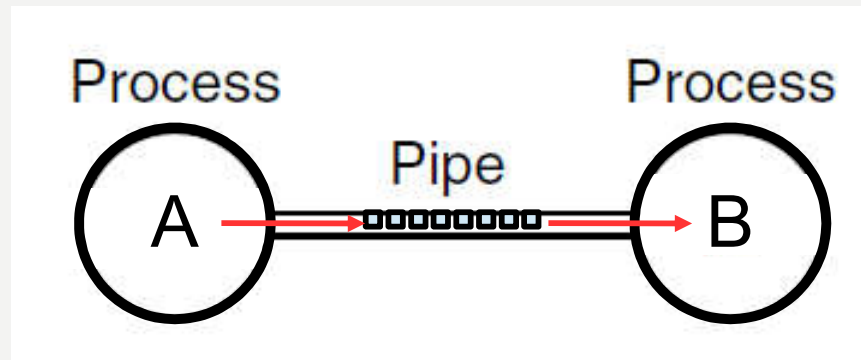Figure 1-14. A file system for a university department.

MOUNTING

(a)

(b)

Mounting is the process of stitching the file system from a new device or volume into an existing file system so that devices are transparent

Figure 1-15. (a) Before mounting, the files on the CD-ROM are not accessible.

PIPES

Pipes are a way for processes to communicate as though they were writing to or reading from a file, except that all access is only sequential.

Figure 1-16. Two processes connected by a pipe.

Process A writes chars to the pipe

Process B reads chars from the pipe

Summary

- Processes
    - Programs in execution
    - Not the same as a program!
- Files
    - Logically named persistent storage
    - Also paradigm for I/O devices, communications