CSS222 - Summary

مقدمة الملف

أهلًا فيكم !

أتمنى أن يكون هذا الملف مساعدًا لك في فهم الدروس بسهولة ويسر.

أسأل الله أن يوفقك في كل خطوة، وييسر لك الصعوبات، ويجعل العلم نورًا يهديك في حياتك

@Nubgha

CSS222 - Summary

Chapter 7: File-System Interface

Term	Definition
File	Contiguous logical address space; an abstract data type (ADT)
File Attributes	Name, Identifier, Type, Location, Size, Protection, Time/date/user identification
File Operations	Create, Write, Read, Reposition within file, Delete, Truncate
Open(Fi)	Search the directory structure on disk for entry Fi, and move content of entry to memory
Close(Fi)	Move the content of entry Fi in memory to directory structure on disk
File Pointer	Pointer to last read/write location, per process that has the file open
File-Open Count	Counter of number of times a file is open; allows removal from open-file table when last process closes it
Open File Locking	Mediates access to a file; can be Mandatory or Advisory
Mandatory Locking	Access is denied depending on locks held and requested
Advisory Locking	Processes can find status of locks and decide what to do
Sequential Access	Read next, write next, reset; no read after last write (rewrite)
Direct Access	Read n, write n, position to n, read next, write next, rewrite n (n = relative block number)
Partition	Subdivision of a disk; also known as minidisks or slices
Volume	Entity containing a file system
Device Directory	Volume table of contents tracking file system info
Directory Structure	A collection of nodes containing information about all files
Mount Point	Location in the existing file system where an unmounted file system is attached
NFS	Network File System; a common distributed file-sharing method
CIFS	Common Internet File System; standard Windows file sharing protocol
Protection	Controls who can do reading, writing, executing on a file
Location Transparency	File name does not reveal the file's physical storage location
Location Independence	File name does not need to change when the file's physical storage location changes

1. File Types (Data)

- Numeric
- Character
- Binary
- Binary

2. File Structure Types

- None — sequence of words, bytes
- Simple record structure — Lines, Fixed length, Variable length
- Complex Structures — Formatted document, Relocatable load file

CSS222 - Summary

Chapter 7: File-System Interface

3. Open File Data Needed
• File pointer
• File-open count
• Disk location of the file
• Disk location of the file
• Access rights

4. Access Methods
• Sequential Access
• Direct Access

5. Operations Performed on Directory
• Search for a file
• Create a file
• Delete a file
• List a directory
• Rename a file
• Traverse the file system (tree search)

6. Directory Organization Goals
• Efficiency — locating a file quickly
• Naming — convenient to users; two users can have same name for different files
• Grouping — logical grouping of files by properties

7. Directory Structure Types

Type	Description
Single-Level	A single directory for all users; naming and grouping problems
Two-Level	Separate directory for each user; path name; efficient searching; no grouping capability
Tree-Structured	Efficient searching; grouping capability; supports current/working directory; absolute or relative path

8. File Sharing — Remote Access Methods
• Manually via programs like FTP
• Automatically using distributed file systems
• Semi-automatically via the World Wide Web

9. Types of Access (Protection)
• Read
• Write
• Execute
• Append
• Delete
• List

10. Access Control Classes (UNIX)

Class	Value	RWX
Owner access	7	1 1 1
Group access	6	1 1 0
Public access	1	0 0 1