

## File Systems:

A filesystem is the methods and data structures that an operating system uses to keep track of files on a disk or partition, that is, the way the files are organized on the disk.

A file is an entry in a directory. The file may have attributes like name, creator, date, type, permissions etc.

### File Structure:

A file has various kinds of structure. Some of them can be :

1. Simple Record Structure with lines of fixed or variable lengths.
2. Complex Structures like formatted document or reloadable load files.
3. No Definite Structure like sequence of words and bytes etc.

### Attributes of a File:

1. Name. It is the only information which is in human-readable form.
2. Identifier. The file is identified by a unique tag(number) within file system.
3. Type. It is needed for systems that support different types of files.
4. Location. Pointer to file location on device.
5. Size. The current size of the file.
6. Protection. This controls and assigns the power of reading, writing, executing.

### File Access Methods:

1. Sequential Access: Data is accessed one record right after another in an order.
2. Direct Access: There are no restrictions, blocks read/written, can be done in any order.
3. Indexed Sequential Access: It uses an Index to control the pointer while accessing files.

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69. What are the various services provided by Operating system ?
70. What do you mean by PCB? Where is it used? What are its contents? Explain.
71. What is Binary and Counting semaphores ?
72. What is File? What are the different File attribute and operations?
73. What are System call? Explain briefly about various types of system call provided by an Operating System?
74. Describe necessary conditions for deadlocks situation to arise.
75. What are points to be consider in file system design? Explain linked list allocation in detail?
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77. Consider the following page reference string:1,2,3,4,5,3,4,1,2,7,8,7,8,9,7,8,9,5,4,5.

How many page faults would occur for the following replacement algorithm, assuming four frames:  
a) FIFO  
b) LRU

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