

Explain the following in brief Contiguous and Linked list allocation for implementing file system?

Contiguous and linked list allocation are two common techniques for implementing file systems in operating systems. Both techniques are used to allocate disk space for files, but they differ in their approach to how the disk space is allocated.

Contiguous Allocation

In contiguous allocation, each file is stored in a contiguous block of disk space. When a file is created, the operating system searches for a block of free space that is large enough to hold the entire file. The starting location and size of the file are recorded in the file allocation table. The advantage of contiguous allocation is that it is simple and efficient in terms of file access, as files can be accessed quickly without the need to traverse pointers. However, it suffers from fragmentation as free blocks may become scattered, making it difficult to allocate large files.

Linked List Allocation

In linked list allocation, each file is stored as a linked list of blocks. Each block contains a pointer to the next block in the file. When a file is created, the operating system searches for a free block of disk space and links it to the previous block in the file. The starting location of the file is recorded in the file allocation table, along with the number of blocks allocated to the file. The advantage of linked list allocation is that it can handle fragmented disk space, as files can be allocated to any free block of disk space. However, it suffers from poor performance in file access, as each block of the file must be accessed sequentially by traversing the pointers.

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56. For loop without in keyword in Linux
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58. Multiple Processor Scheduling
59. What do you mean by Virtual Memory? Write down its advantages?
60. Compare Paging and Segmentation?
61. What is Process Scheduling, CPU Scheduling, Disk Scheduling? Explain Short, Medium and Long term Scheduler?
62. Explain concept of a process with its components ?
63. Explain various Disk scheduling algorithms with Illustrations ?
64. Define process and thread. What is PCB ? Explain its various entries with their usefulness ?
65. Discuss advantages and disadvantages of the Buffer cache ?
66. Explain different types of OS with examples of each ?
67. What is an Operating System? Write down its desirable characteristics ?
68. Define a deadlock ? Write down the conditions responsible for deadlock? How can we recover from deadlock ?
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?
76. Write a Semaphore solution for dining Philosopher's problem?
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.

Explain the following in brief Contiguous and Linked list allocation for implementing file system?

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

78. Explain CPU schedulers in operating system?
79. Write the different state of a process with the help of Process state diagram?
80. What is Mutex in operating system?
81. Explain Network operating system?
82. What do you mean by paging in operating system ?