

What do you mean by paging in operating system ?

Paging is a memory management technique used by operating systems to allow processes to use more memory than is physically available in the system.

Paging is a form of virtual memory management, where the operating system uses a portion of the hard disk as an extension of the physical memory.

In paging, the memory space of a process is divided into fixed-size blocks called pages, and the physical memory of the system is divided into fixed-size blocks called frames. When a process requires memory, the operating system assigns one or more frames to it, based on the number of pages required. The pages are then mapped to the corresponding frames in the physical memory.

If the physical memory is insufficient to hold all the pages of a process, the operating system can swap out some pages to the hard disk, freeing up space in the physical memory for other processes. The swapped-out pages are stored in a dedicated area on the hard disk called the page file.

When a process attempts to access a page that is not currently in the physical memory, the operating system generates a page fault, and the required page is brought back into the physical memory from the page file.

Paging provides several benefits to the operating system, including:

1. **Efficient use of physical memory:** Paging allows multiple processes to share a limited amount of physical memory, reducing the need for more physical memory.
2. **Memory protection:** Each process has its own virtual address space, ensuring that it cannot access memory outside its allocated space, improving security and stability.

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3. Flexible memory allocation: Paging allows the operating system to allocate memory to a process on demand, rather than allocating all the memory at once, reducing memory wastage.

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60. Compare Paging and Segmentation?
61. What is Process Scheduling, CPU Scheduling, Disk Scheduling? Explain Short, Medium and Long term Scheduler?
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63. Explain the following in brief Contiguous and Linked list allocation for implementing file system?
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65. Define process and thread. What is PCB ? Explain its various entries with their usefulness ?
66. Discuss advantages and disadvantages of the Buffer cache ?
67. Explain different types of OS with examples of each ?
68. What is an Operating System? Write down its desirable characteristics ?
69. Define a deadlock ? Write down the conditions responsible for deadlock? How can we recover from deadlock ?
70. What are the various services provided by Operating system ?
71. What do you mean by PCB? Where is it used? What are its contents? Explain.
72. What is Binary and Counting semaphores ?

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73. What is File? What are the different File attribute and operations?
74. What are System call? Explain briefly about various types of system call provided by an Operating System?
75. Describe necessary conditions for deadlocks situation to arise.
76. What are points to be consider in file system design? Explain linked list allocation in detail?
77. Write a Semaphore solution for dining Philosopher's problem?
78. 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
79. Explain CPU schedulers in operating system?
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81. What is Mutex in operating system?
82. Explain Network operating system?