Binary Semaphore

A binary semaphore is a synchronization object that has two states: 0 and 1. It is used to control access to a shared resource where only one process or thread can access the resource at a time. The binary semaphore can be viewed as a lock that is either open (1) or closed (0). When a process or thread wants to access the shared resource, it must acquire the semaphore (set it to 0). If the semaphore is already set to 0, the process or thread is blocked until the semaphore is released (set to 1) by another process or thread.

Counting Semaphore

A counting semaphore is a synchronization object that has an integer value that can be incremented or decremented by a process or thread. It is used to control access to a shared resource where a fixed number of processes or threads can access the resource at the same time. The counting semaphore can be viewed as a set of locks, where the number of locks is equal to the value of the semaphore. When a process or thread wants to access the shared resource, it must acquire one of the locks (decrement the semaphore value). If all the locks are already taken, the process or thread is blocked until one of the locks is released (increment the semaphore value) by another process or thread.

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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 the following in brief Contiguous and Linked list allocation for implementing file system?
64. Explain various Disk scheduling algorithms with Illustrations ?
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 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. How many page faults would occur for the following replacement algorithm, assuming four frames:a) FIFOb) LRU
78. Explain CPU schedulers in operating system?
79. Write the different state of a process with the help of Process state deagram?

80. What is Mutex in operating system?
81. Explain Network operating system?
82. What do you mean by paging in operating system ?