Operating System Assignment-2

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Q-1

Deadlock occurs when more than one processes are blocked. Conditions for Deadlock Mutual Exclusion, Hold and Wait, No preemption, Circular wait. These 4 conditions must hold at the same time for the occurrence of deadlock.

Q-2

Deadlock Prevention:

Preventing deadlocks by constraining how requests for resources can be made in the system and how they are handled .The goal is to ensure that at least one of the necessary conditions for deadlock can never hold.

Deadlock Avoidance:

The system dynamically considers every request and decides whether it is safe to grant it at this point,The system requires additional apriori information regarding the overall potential use of each resource for each process. Allows more concurrency.

Q-3

Banker's algorithm is a deadlock avoidance algorithm.That

algorithm is mostly used in banking systems to control whether a loan can be granted or not.

Consider there are n account holders in a bank and the sum of the money in all of their accounts is S. Every time a loan has to be granted by the bank, it subtracts the loan amount from the total money the bank has. Then it checks if that difference is greater than S. It is done because, only then, the bank would have enough money even if all the n account holders draw all their money at once.

Banker's algorithm also works computers.

Q-4

Need Matrix :

2 2 1 4
0 2 3 2
2 1 1 5
5 2 0 0
1 1 1 2
1 0 1 12

2,5,1 processes works safety .Other processes goes deadlock.