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Assignment

0.5

QUESTION - NO - 1ANS:-Necessary Conditions:-

A deadlock situation on a resources can arise if and only if all of the following conditions hold simultaneously in a system: Mutual exclusion At least one one resources must be held in a non - sharable mode. otherwise the processes would not be prevented from using resource when necessary.

Methods:-

- Deadlock ignorance, it is the most popular method and it acts as if no deadlock and the user will restart.
- Deadlock prevention.
- Deadlock avoidance
- Detection and recovery.

QUESTION - NO - 2:-ANS:-

It is not possible to have a deadlock involving only one single process. The deadlock involves a circular "hold - and - wait" condition between two or more processes, so "one" process cannot hold a resource, yet be waiting for another resource that it is holding.

QUESTION - 3**ANS:-**

Suppose the system is deadlocked. This implies that each process is holding one resource and is waiting for one more. Since there are three processes and four resources, one process must be able to obtain two resources. This process requires no more resources and therefore it will return its resources when done.

**QUESTION - No - 4:-****ANS:-****Resource allocation graph:-**

The resource allocation graph is the pictorial representation of the state of a system. As its name suggests, the resource allocation graph is the complete information about all the processes which are holding some resources or waiting for some resources.

Wait - for graph:-

A wait-for graph is a directed graph used for deadlock detection in operating systems and relational database systems.

In computer science, a system that allows concurrent operation of multiple processes and locking of resources and which does not provide mechanisms to avoid or prevent deadlock must support a

mechanism to detect deadlock and an algorithm for recovering from them

QUESTION - No - 5

ANS:-

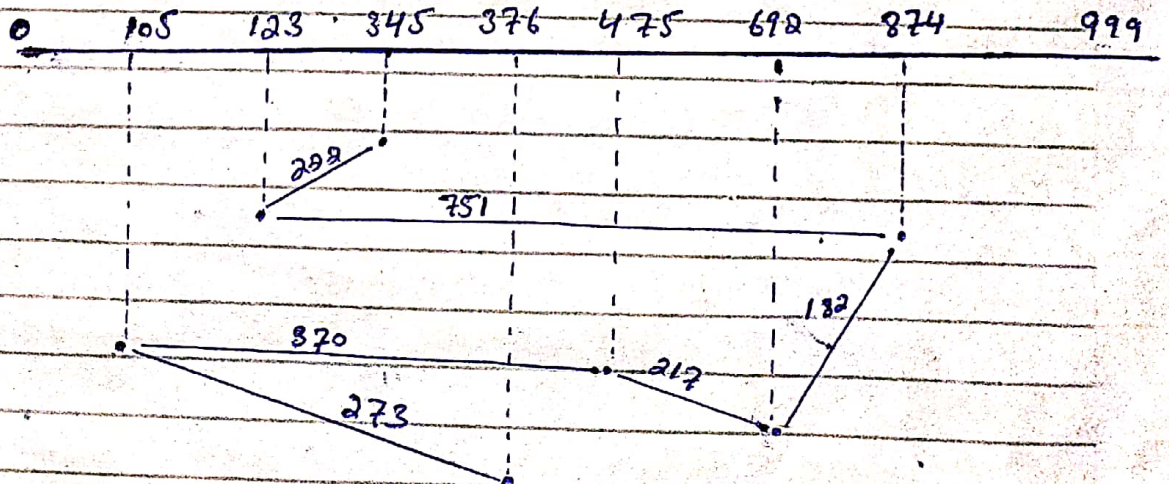
Detection of starvation in effect require future knowledge since no amount of record-keeping statistics on processes can determine if it is making "progress" or not. However, starvation can be prevented by "aging" a process. This means maintaining a rollback count for each process and including this as part of the cost factor in the selection process for a victim for preemption/rollback.

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QUESTION - No - 6:-

ANS:-

FCFS:-



SSTF:

