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OS - Assignment - II

① The bounded - Buffer Problem

② (iii) A critical section

③ A Mutual Exclusion

④ Binary Semaphores, Counting Semaphores.

⑤ Concurrency

Short Q's

① It ensures that once a thread has locked a piece of code then no other thread can even execute the same region until it is unlocked by the thread who locked it

② Deadlock is a solution which involves the interaction of more than one resources and process with each other. When a process requests for the resource that is been held another process which needs another resource to continue.

(2) In the ~~computer System~~,

(3) A Co-operating process is one which can affect/ affected by any another process that is running on the computer.

(4) In this, the request for any resource will be granted of the resulting state of the system doesn't cause deadlock in the system.

(5) The state of the system instead of using those table, actual tables, are very easy to represent and understand it, but then still you could even represent the same information in the graph. this is called Resource Allocation Graph (RAG)

LONG Q's

(1) The critical sections ~~access~~ accesses a shared resource such as data structure, a peripheral device, or a network connection, that would not

operate correctly in the context of multiple concurrent accesses

Implementation of critical sections :

→ Critical section will usually terminate in finite time, and a thread, task / process will have to wait for a fixed time to enter it. To ensure exclusive use of critical section some synchronization mechanism is required at the entry and exit of the program.

→ One thread blocks a critical section by using locking technique when it needs to ~~access~~ access the shared databases.

→ The simplest method to prevent any change of processor control inside ~~the~~ the critical section is implementing a semaphore