CSE321 Assignment

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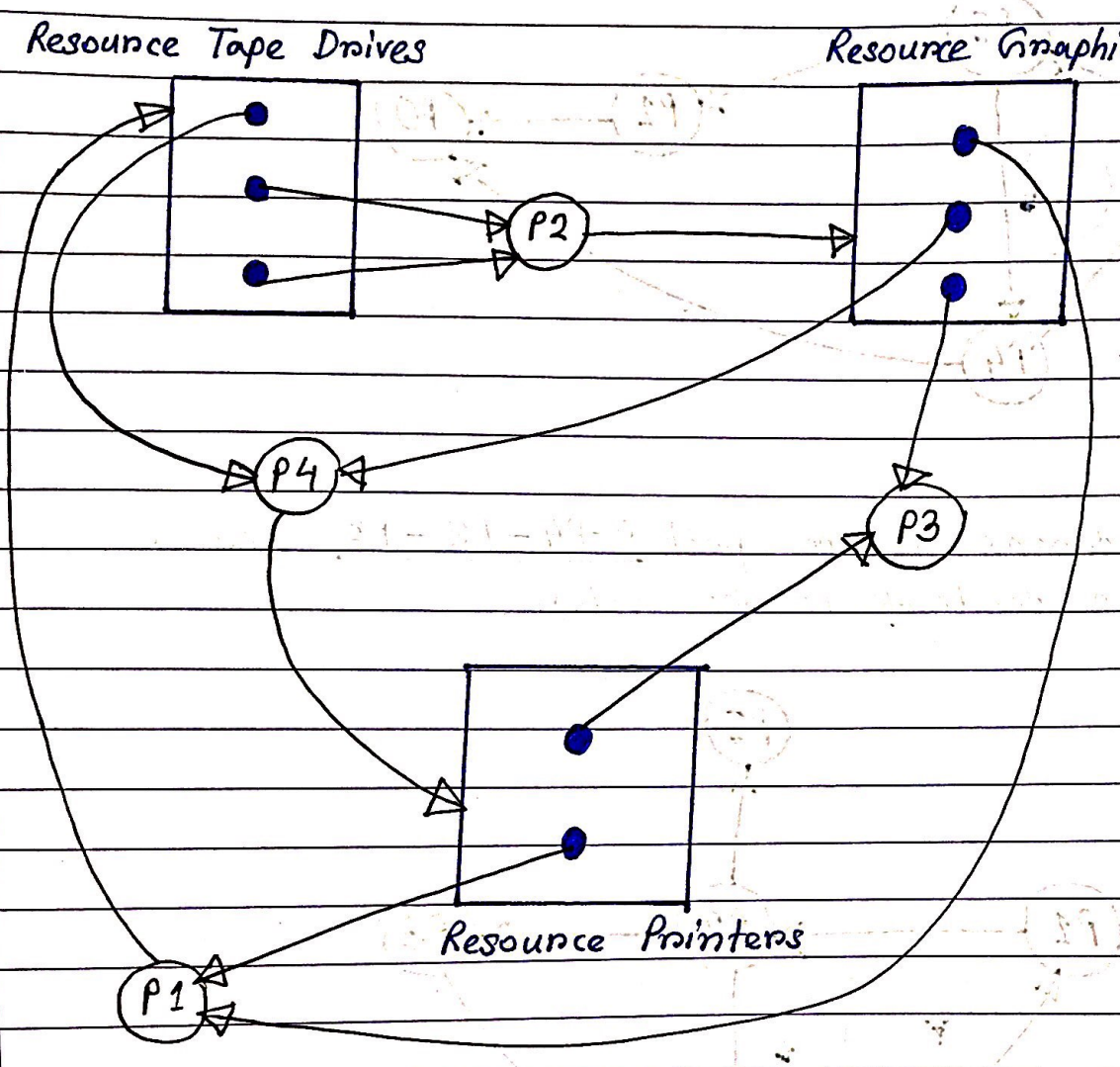
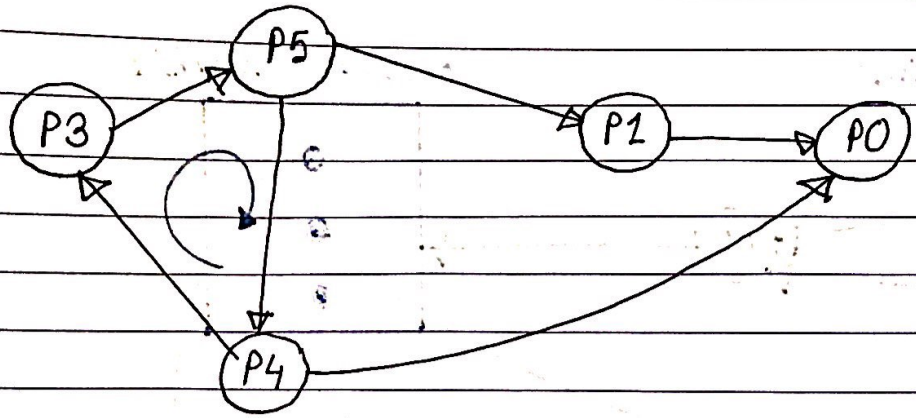
1.



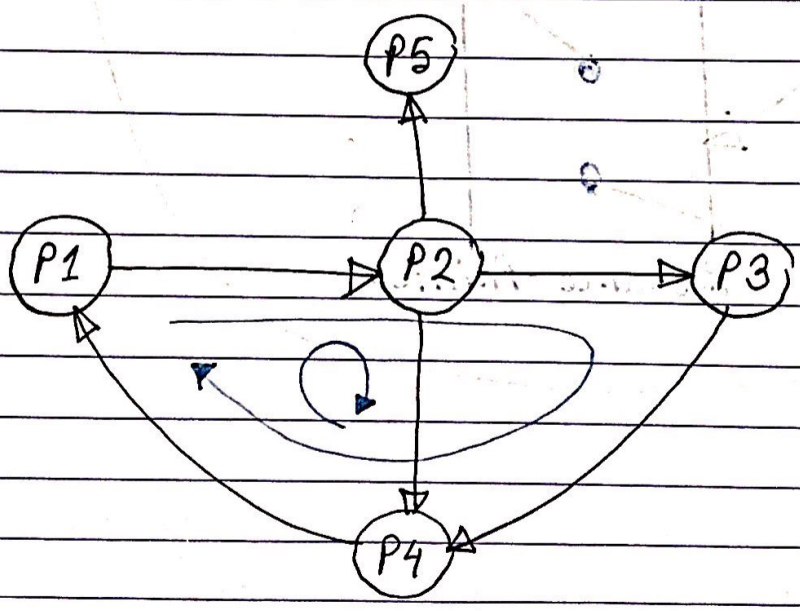
Eventually there is no deadlock in the system.
Because, when P3 gets completed, it frees up one resource instance from both Resource Graphics and Resource Printers. So, P4 will get hold of one instance from Resource Printer, and P2 will get hold of one instance of Resource Graphics. Eventually, all the processes waiting for an instance gets assigned to it, and hence there is no deadlock formed in the system.

3.



A cycle forms in the path P5-P4-P3-P5 and so there is a deadlock in the system.

2.



Cycle formation in path P1-P2-P3-P4-P1 and path P1-P2-P4-P1.

Since this is a single instance graph, formation of cycle indicates deadlock in the system.

(4.)

Critical Section ⇒ (Marking)

Critical Section cannot be executed by more than one process at the same time.

So while the teacher is marking individually, if another student (process) interrupts and wants to access, race condition may arise. Hence, marking is treated as an atomic instruction, and therefore, identified as the Critical Section in this case.