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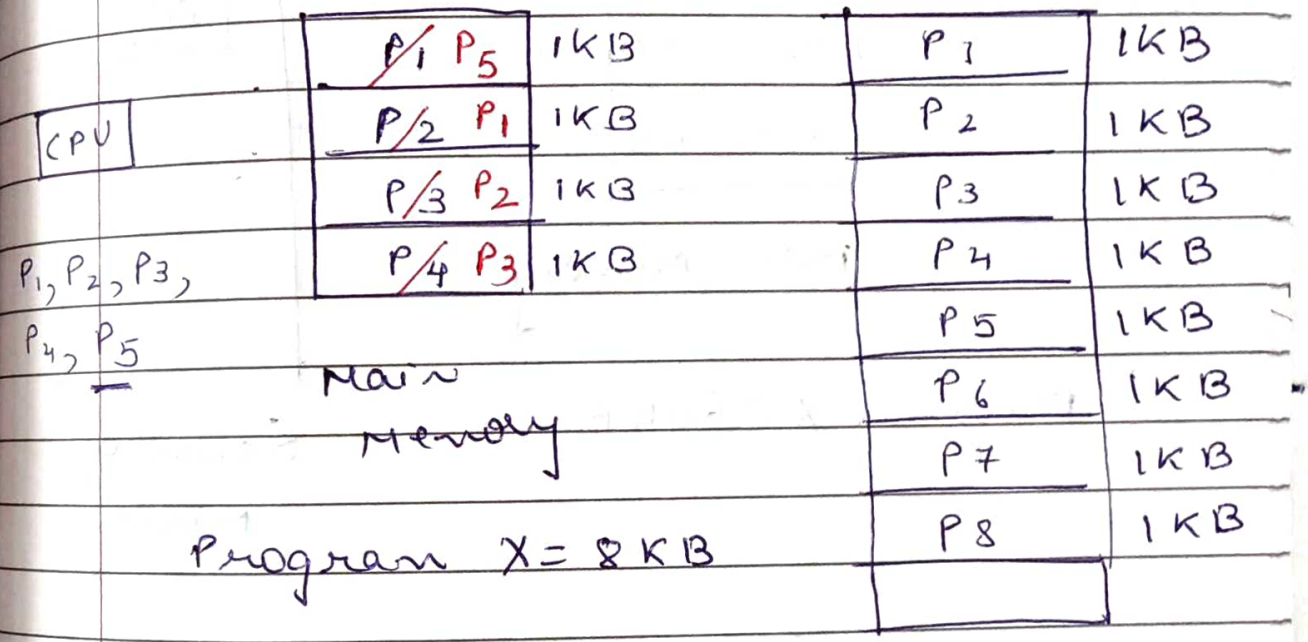
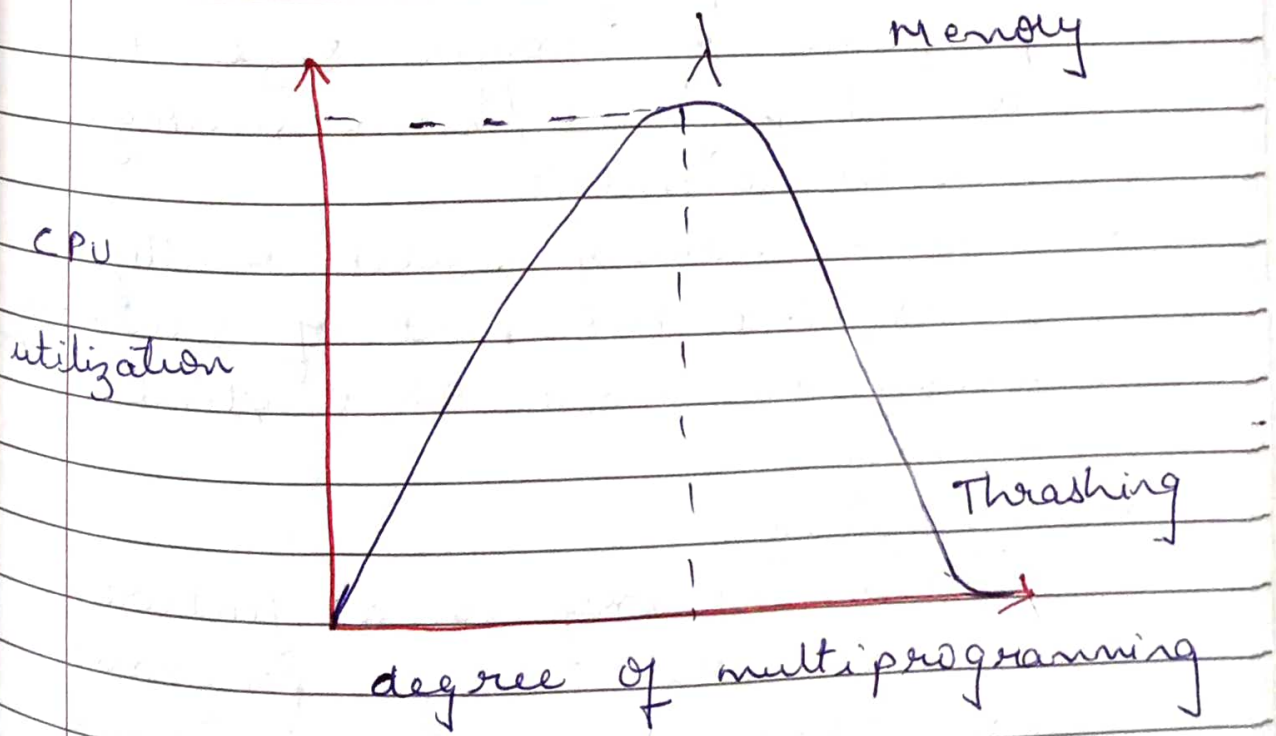
Thrashing

- In the initial stage when we increase the degree of multiprogramming, CPU utilization is very high upto λ.
- Further, if we increase the degree of multiprogramming, CPU utilization is drastically falling down.
- This situation in the system is called Thrashing.
- Thrashing degrades the peformance of system.
- There can be a situation where main memory is full of pages that are accessed frequently. A page fault will occur if the required page is not present.
- In order to make space for swapping in the required page, one of the frequently accessed page is swapped out.
- Soon, the swapped out page is required for execution & this again results in page fault.
- Thus, a series of page fault

occur & swapping becomes a large overhead.





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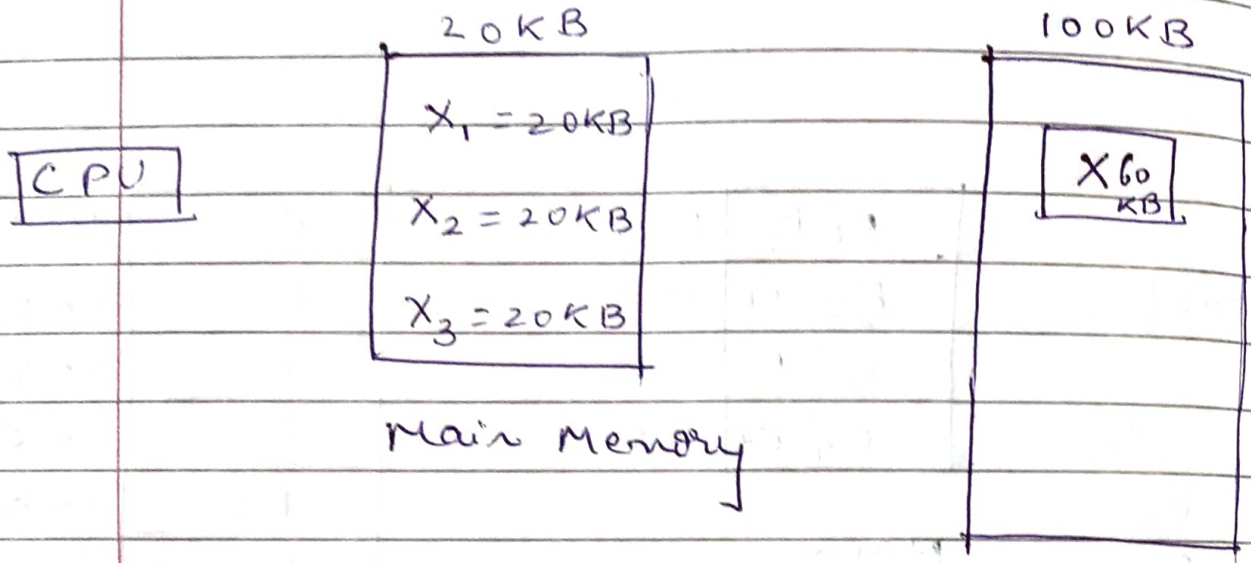
~~Module~~

Virtual Memory



- Virtual memory gives an illusion to the programmer that programs of larger size than actual physical / main memory can be executed.
- Virtual memory doesn't really exists, but the part of secondary memory are made as virtual memory.
- Definition
Virtual memory is a feature in O.S. where large programs can store themselves in form of pages ~~wh~~ during their execution & only the required

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pages or portions of processes are loaded into main memory.

Virtual memory can be implemented using demand paging & demand segmentation.