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Operating System

Contiguous Memory Allocation:

Practice Problems:

Problem - 01:

Consider six memory partitions of size 200KB, 400KB, 600KB, 500KB, 300KB and 250 KB. These partitions need to be allocated to four processors of sizes 357 KB, 210KB, 468KB and 491KB in that order.

Perform the allocation of processors using.

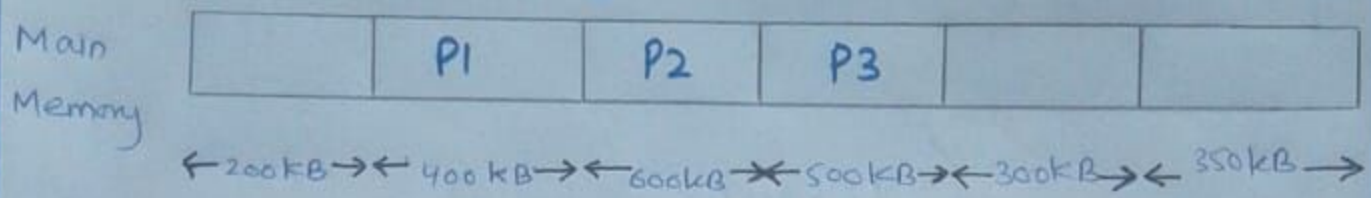
1- First fit Algorithm
2- Best fit Algorithm
3- worst fit Algorithm

Solution:

given processes are.

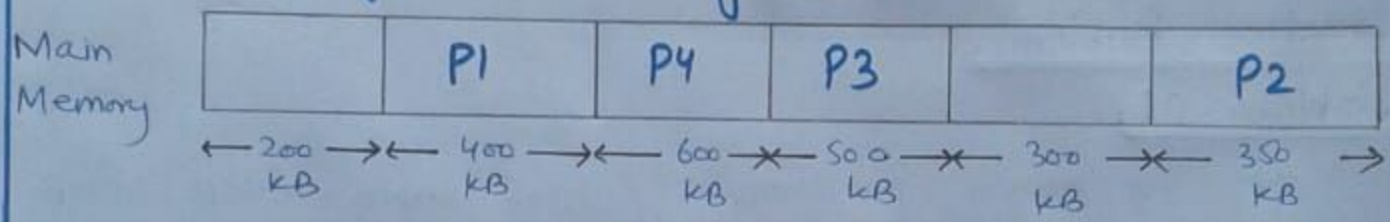
Process P1 = 357 kB
Process P2 = 210kB
Process P3 = 468 kB
Process P4 = 491 kB

Allocation using first fit Algorithm:

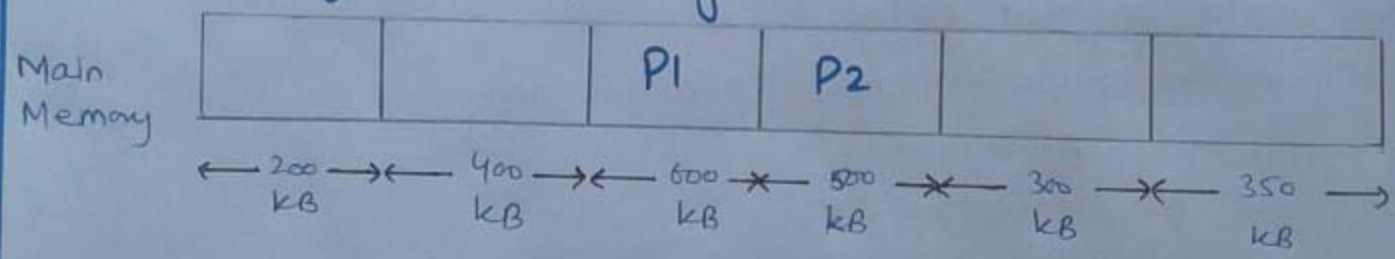


Process P4 can't be allocated the memory.
This is because no partition of size greater than or equal to the size of process P4 is available.

Allocation using Best fit Algorithm:



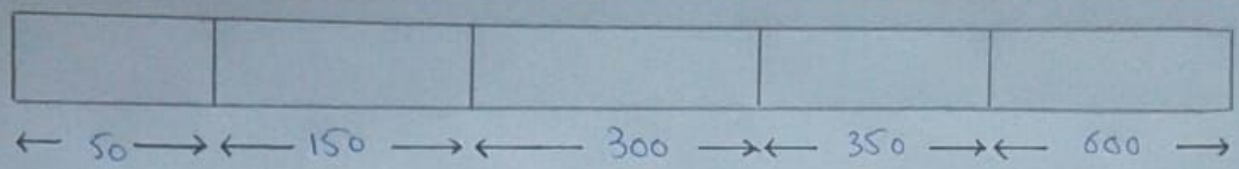
Allocation using worst fit Algorithm:



Process P3 and P4 can't be allocated to memory.
This is because no partition of size greater than or equal to the size of process P3 and P4 is available.

Problem - 02:

Consider the following heap (figure) in which blank regions are not in use and hatched regions are in use.



Main Memory

The Sequence of requests for blocks of size 300, 25, 125, 50 can be satisfied if we use:

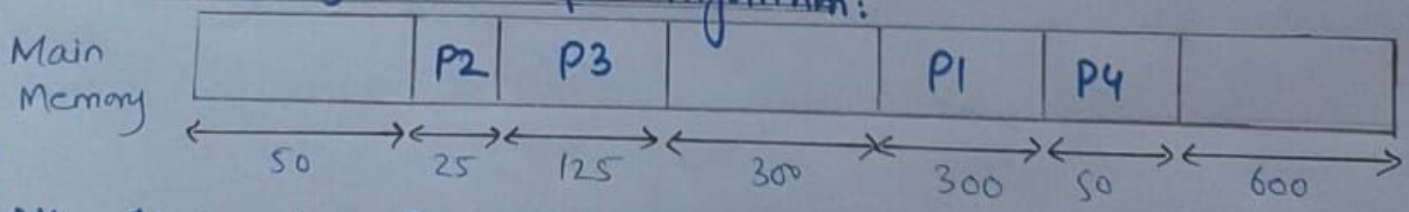
1- Either first fit or best fit policy (any one)
2- first fit but not best fit policy
3- Best fit but not first fit policy
4- None of the above.

Solution:

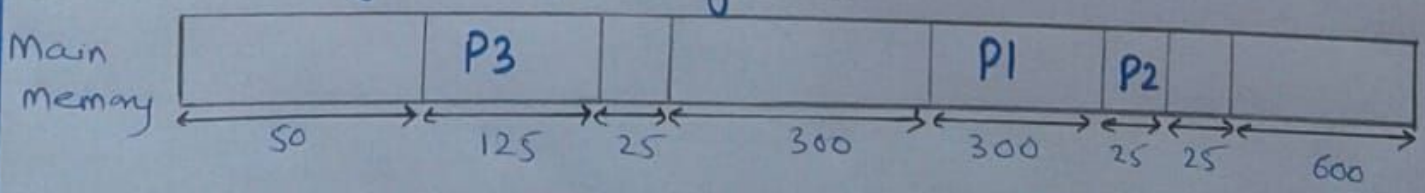
given processes are:

process P1 = 300 units
Process P2 = 25 units
Process P3 = 125 units
Process P4 = 50 units

Allocation using first fit Algorithm:



Allocation using Best fit Algorithm:



Process P4 can't be allocated the memory.

This is because no partitions of size greater than or equal to the size of process P4 is available. option (B) is correct.