* System Programming and Operating System (SPOS) - Assignment Number - 6

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★ Compare following memory allocation strategies with example

1. First fit
2. Best fit
3. Worst fit.

→ First fit-

In the first fit approach is to allocate the first free parition or hole large enough which can accommodate the process. It finishes after finding the first suitable free partition.

Best fit-

The best fit deals with allocating the smallest free partition which meets the requirement of the requesting process. This algorithm first searches the entire list of free partition and considers the smallest hole that is adequate. It then tries to find a hole which is close to actual process size needed.

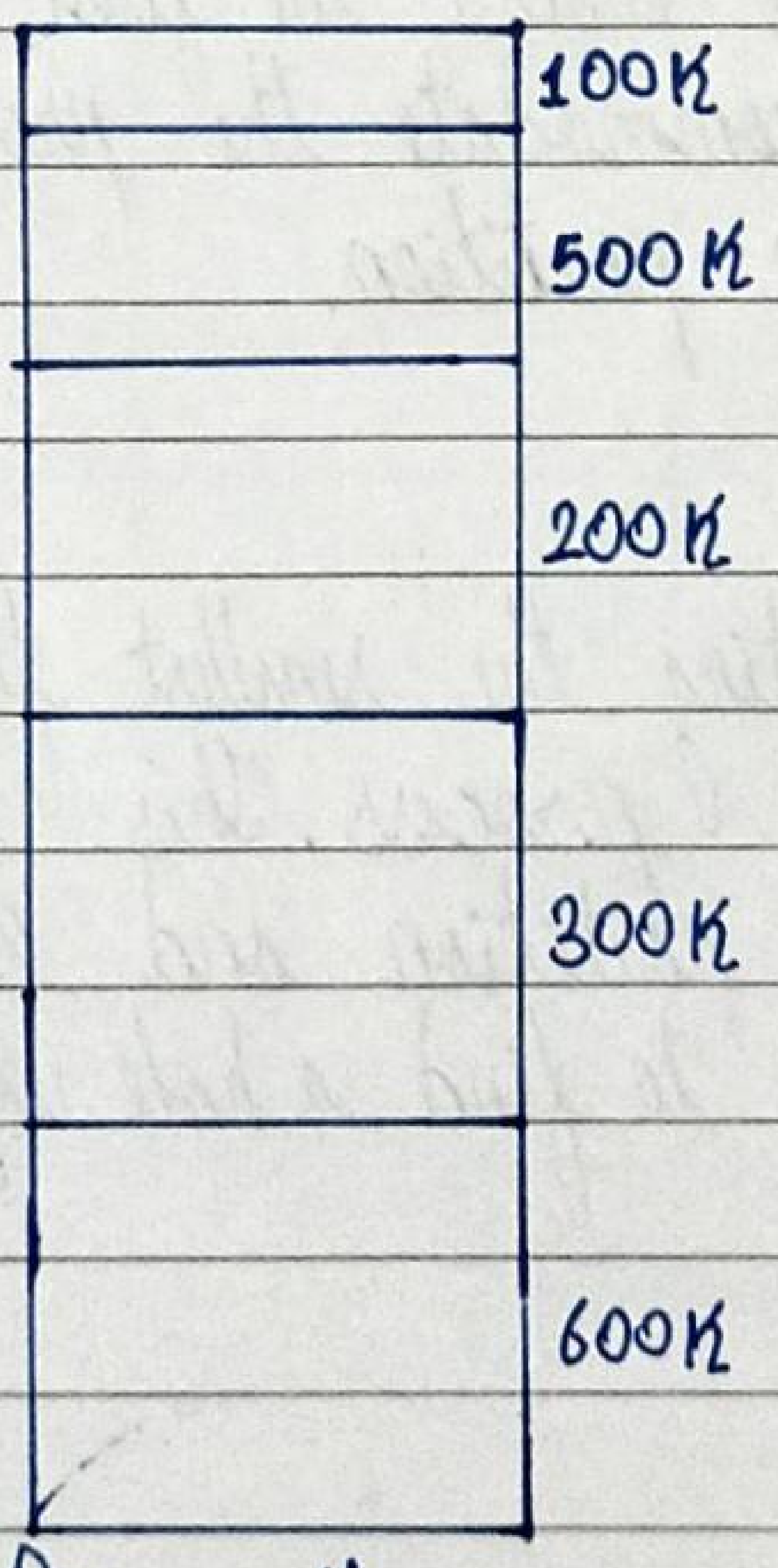
Worst fit -

In worst fit approach is to locate largest available free portion. So that the portion left will be big enough to be useful. It is the reverse of best fit

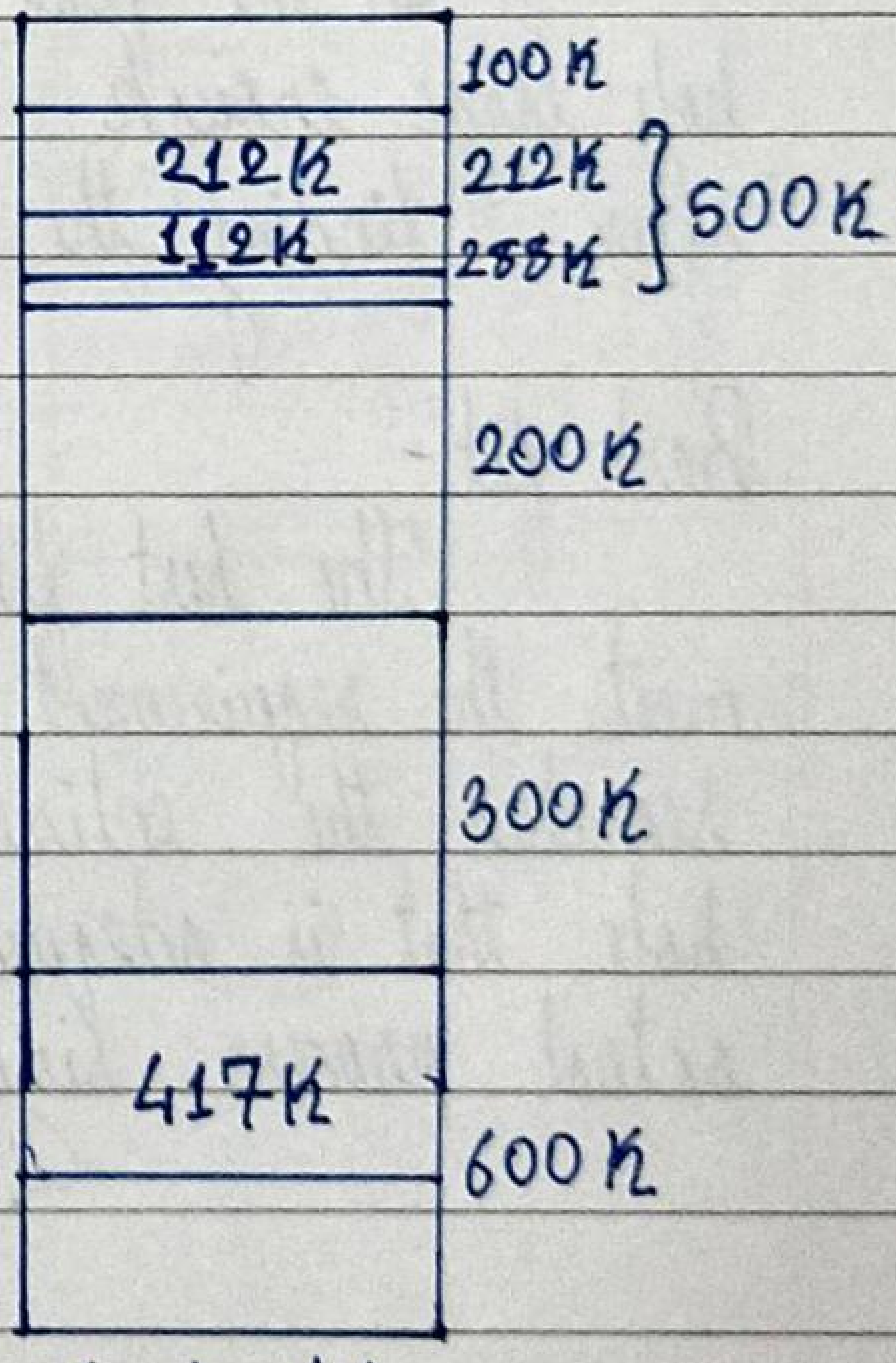
Example:- Given a memory partitions of 100K, 500K, 200, K, 300K, and 600K (in order). how would each of the first fit, best fit. and worst fit algorithms places processes of 212K, 417K, 112K, and 426K (in order) ?

→ First-fit:-

212K is put in 500K partition
417K is put in 600K partition
112K is put in 288K partition
(new partition 288K = 500K - 212K)
426K must wait.



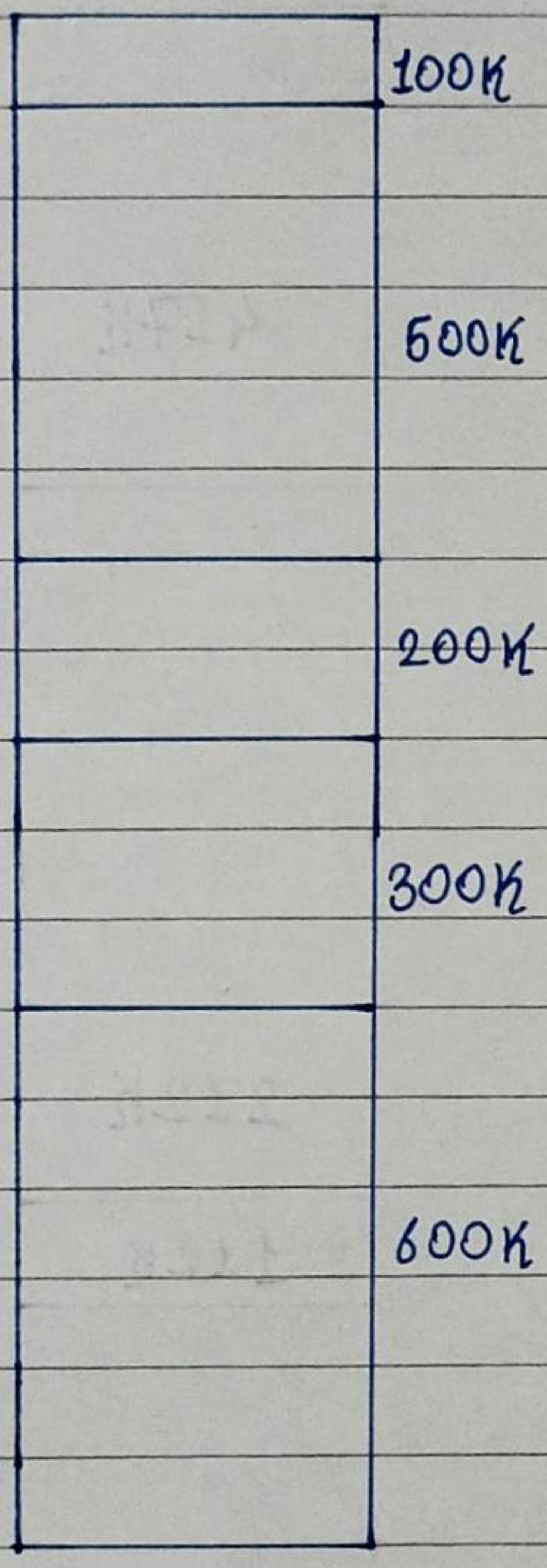
Primary Memory



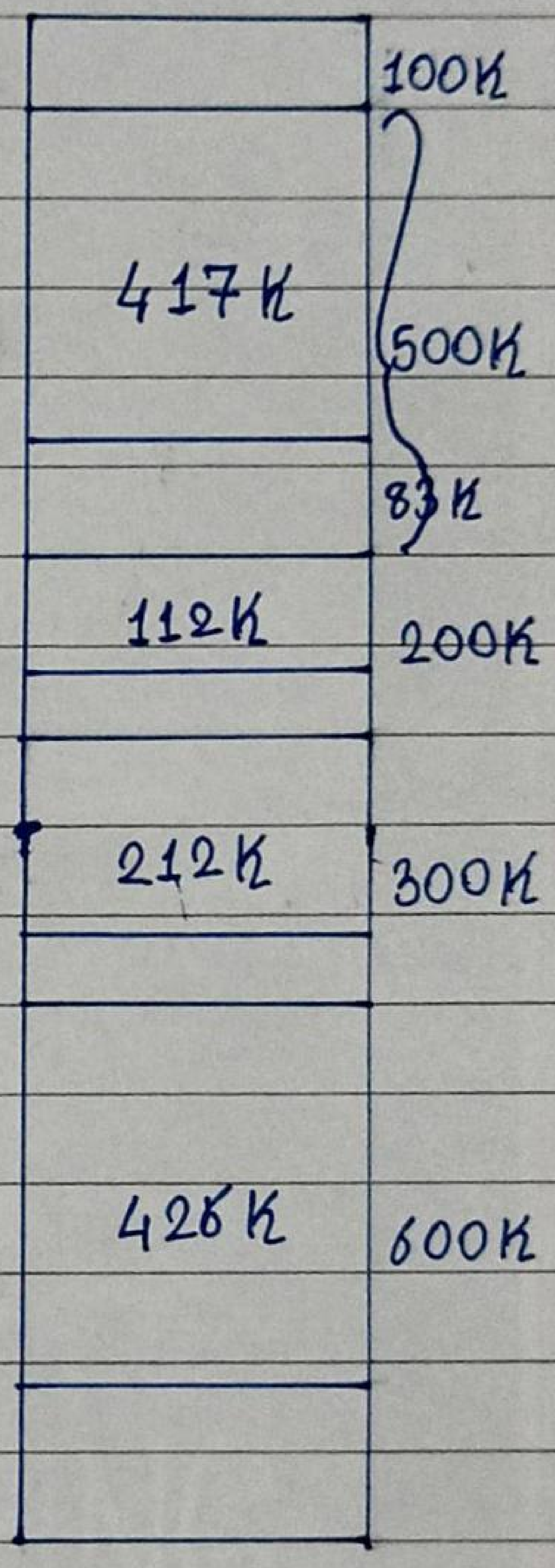
First - fit

Best fit:-

212 K is put in 300 K partition
417 K is put in 500 K partition
112 K is put in 200 K partition
426 K is put in 600 K partition.



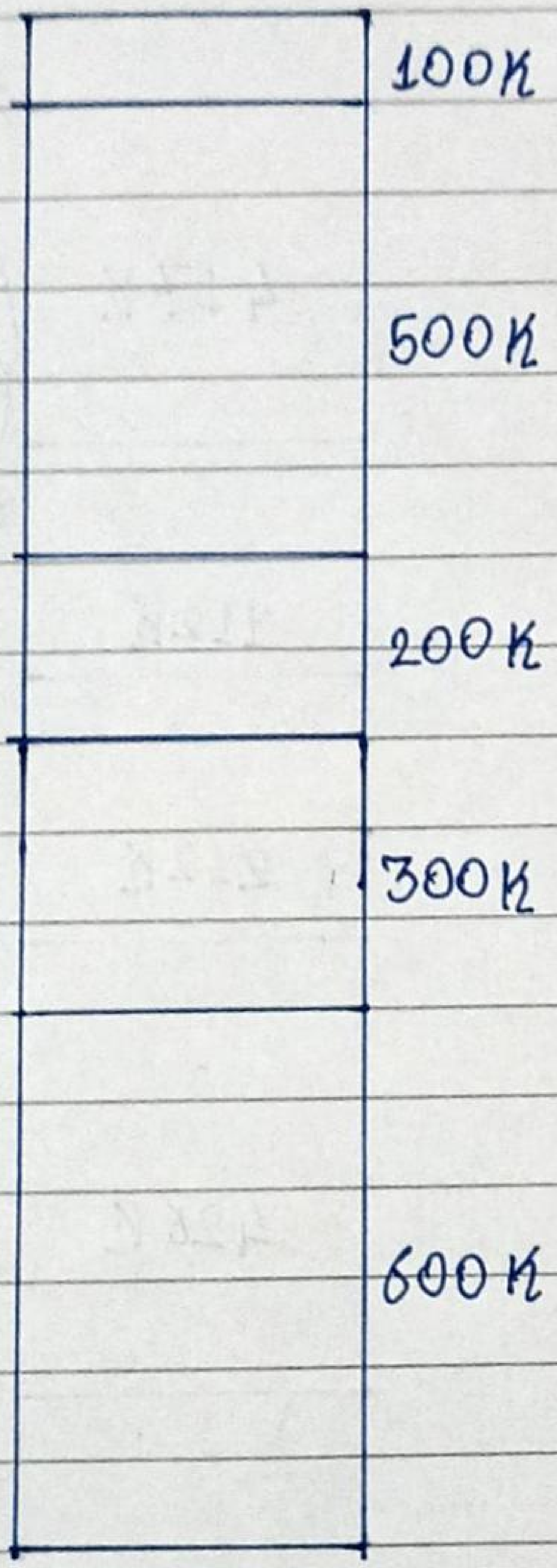
Primary Memory



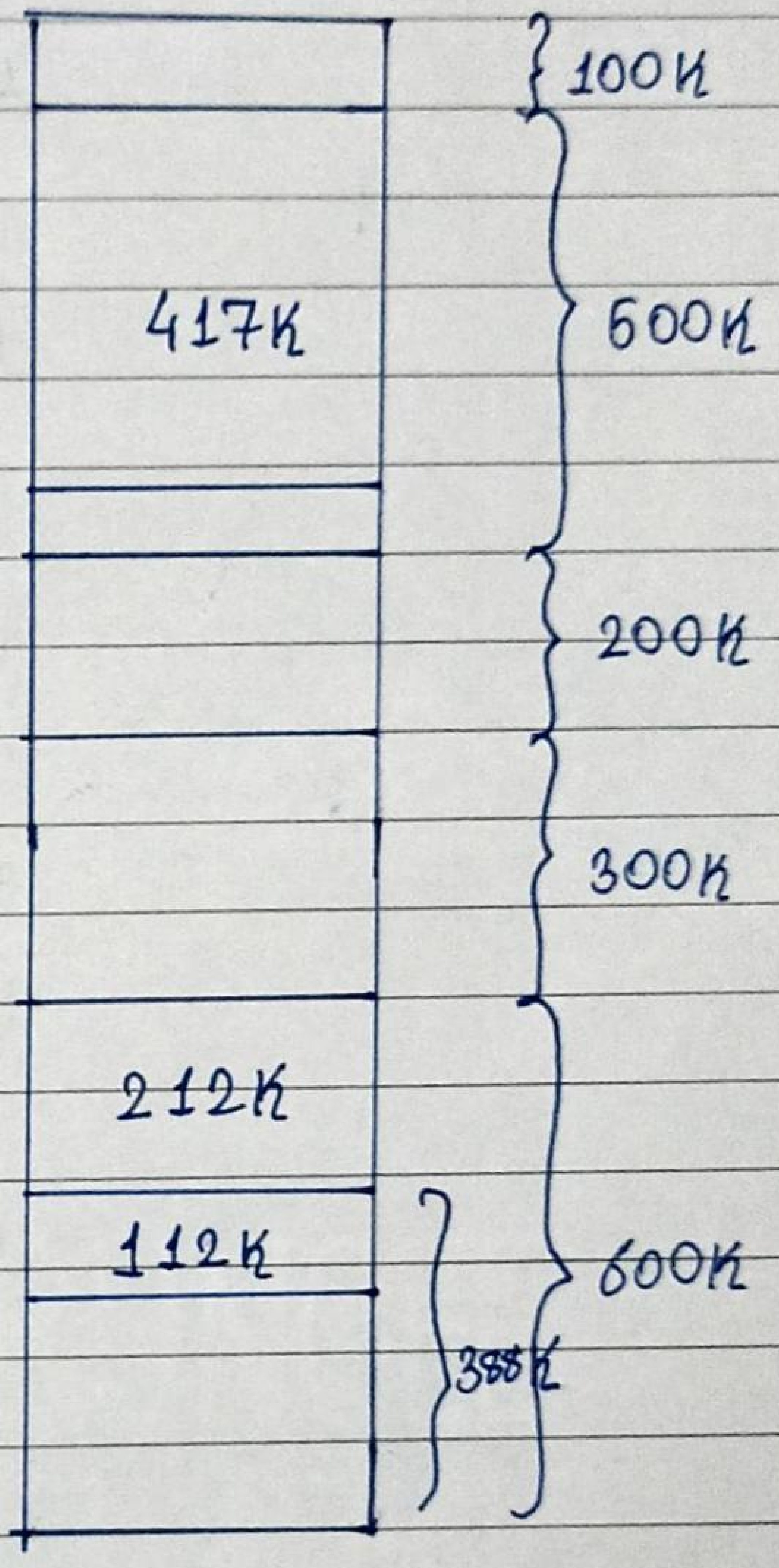
Best fit.

Worst-fit

212 K is put in 600 K partition
417K is put in 500 K partition.
112 K is put in 388 K partition (new partition 388K = 600K - 212K)
426 K must wait.



Primary Memory



Worst fit