Lab Three

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September 22, 2019

1 Problem One

1.1 What are the differences between Internal and External fragmentation?

Internal fragmentation is when memory must be broken into fixed-sized blocks due to a process allocating more memory than required. Fixing this is allocating the memory based on the block sizes. External fragmentation is when memory is divided into variable-sized partitions based on process size. When smaller processes replace the processes swapped out of memory, they leave non contiguous blocks of unused space. These spaces can't be put together to serve requests, as they are non contiguous. This type of fragmentation can be fixed by compacting, paging, or segmentation.

2 Problem Two

2.1 Given Five Memory partitions of 100KB, 500KB, 200KB, 300KB, and 600KB (in that order), how would optimal first-fit, best-fit, and worst-fit algorithms place processes of 212KB, 417KB, 112KB, and 426KB (in that order)?

First-fit: 212KB allocated to 500KB partition, 417KB to 600KB, 112KB to 200KB, and 426KB must wait for allocation.

Best-fit: 212KB to 300KB, 417KB to 500KB, 112KB to the 200KB partition, and 426KB to the 600KB partition

Worst-fit: 212KB to the 600KB partition, 417Kb to the 300KB partition, 112KB to the 300KB partion, and 426KB must wait to be allocated.