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Operating System

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Lab 3

1. Explain the difference between internal and external fragmentation.

Internal fragmentation and external fragmentation is different in the way available memory becomes unusable. For external fragmentation, there is enough memory, but the free memory is not contiguous in a block to be allocated to store the program. For internal fragmentation, more than enough memory was allocated to a program which leaves not enough address space for the next program.

2. Given Five (5) 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:

store 212KB in 500KB memory partition, store 417KB in 600KB memory partition, store 112KB into the remainder 288KB (500KB – 212KB) memory partition, 426KB must wait for an available memory partition

Best-Fit:

store 212 KB in 300KB memory partition, store 417KB in 500KB memory partition, store 112KB in 200KB memory partition, store 426KB in 600KB memory partition

Worst-Fit:

store 212KB in 600KB memory partition, store 417KB in 500KB memory partition, store 112 KB in the remainder 388KB ($600\text{KB} - 212\text{KB}$) memory partition, 426KB must wait for an available memory partition