COMP 304

Assignment 3

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Problem 1

In paging there is no external fragmentation and its supports code sharing between processes.

Segmentation is suffers from external fragmentation and its support code sharing in the segment level.

Contiguous allocation is suffers from external fragmentation if it uses best-fit, first-fit or worst fit allocation. There is no code sharing between processes.

Problem 2

a) page size 8 KB $\Rightarrow 2^{13}$ bytes

total page = $\frac{\text{virtual address space}}{\text{page size}} = \frac{2^{32}}{2^{13}} = 2^{19}$ pages

total size of the table = 4 byte $\times 2^{19} = \boxed{2^{21} \text{ bytes}}$

b) 2^{28} B = $\boxed{256 \text{ MB}}$

c) $\frac{2^{28}}{2^{13}} = \frac{\text{physical address space}}{\text{page size}} = \frac{2^{28}}{2^{13}} = \boxed{2^{15} \text{ pages}}$