

Problem 8.1

- a $(VPN \bmod \text{page_size}) + (\text{PFN} * \text{page_size})$
- b address:
 - i 7196
 - ii page fault
 - iii 379

Paging system does have its weakness with internal segmentation being one of them. Study the subsection on a combined approach of mixing paging and segmentation, starting at pp. 357, and discuss what this approach is, why it is done, and how this approach could be implemented.

Problem 8.4

- FIFO (7, ,), (7, 0,), (7, 0, 1), (2, 0, 1), (2, 0, 1), (2, 3, 1), (2, 3, 0), (4, 3, 0), (4, 2, 0), (4, 2, 3), (0, 2, 3), (0, 2, 3), (0, 2, 3) (8 page faults)
- LRU (7, ,), (7, 0,), (7, 0, 1), (2, 0, 1), (2, 0, 1), (2, 0, 3), (2, 0, 3), (4, 0, 3), (4, 0, 2), (3, 0, 2), (3, 0, 2), (3, 0, 2), (3, 0, 2) (5 page faults)
- Clock (7, ,), (7, 0,), (7, 0, 1), (2, 0, 1), (2, 0, 1), (2, 0, 3), (0, 0, 3), (0, 4, 3), (0, 4, 2), (3, 4, 2), (3, 0, 2), (3, 0, 3), (2, 0, 3) (10 page faults)
- OPT (7, ,), (7, 0,), (7, 0, 1), (2, 0, 1), (2, 0, 1), (2, 0, 3), (0, 0, 3), (0, 4, 3), (0, 4, 2), (3, 4, 2), (3, 0, 2), (3, 0, 3), (2, 0, 3) (8 page faults)

Page 31 in Notes

- (1) The working set with parameter Δ for a process at virtual time t , which we designate as $W(t, \Delta)$, is the set of pages of that process that have been referenced in the last Δ virtual time units.
- (2) This policy is useful because it keeps track of all the pages that have been referenced within a certain time frame, meaning that they will not have to be re-accessed if they are needed again.
- (3) This question doesn't make any sense...
- (4)

Problem 8.18

- a 5 bits for the address, 11 bits for the offset
- b length is 32, width is 9
- c if the physical memory were to be halved, the page size would also have to be halved, so the table size would reduce by 1.