

컴퓨터 구조 6번째 과제

2019040164 정지오

[Problems]

8.6)

a. Split binary address into virtual page number and offset; use VPN as index into page table; extract page frame number; concatenate offset to get physical memory address

b. (i) $1052 = 1024 + 28$ maps to VPN 1 in PFN 7, ($7 \times 1024 + 28 = 7196$)

(ii) $2221 = 2 \times 1024 + 173$ maps to VPN 2, page fault

(iii) $5499 = 5 \times 1024 + 379$ maps to VPN 5 in PFN 0, ($0 \times 1024 + 379 = 379$)

8.8)

3page frames- 9page transfers

4page frames- 10page transfers

8.9)

N	1	2	3	4	5	6	7	8
Ratio	0/15	0/15	2/15	3/15	5/15	8/15	8/15	8/15

8.11)

The machine language version of this program, loaded in main memory starting at address 4000, might appear as:

4000	(R1) ← ONE	Establish index register for i
4001	(R1) ← n	Establish n in R2
4002	compare R1, R2	Test i > n
4003	branch greater 4009	
4004	(R3) ← B(R1)	Access B[i] using index register R1
4005	(R3) ← (R3) + C(R1)	Add C[i] using index register R1
4006	A(R1) ← (R3)	Store sum in A[i] using index register R1

4007	$(R1) \leftarrow (R1) + ONE$	Increment i
4008	branch 4002	
6000-6999	storage for A	
7000-7999	storage for B	
8000-8999	storage for C	
9000	storage for ONE	
9001	storage for n	

The reference string generated by this loop is $494944(47484649444)^{1000}$ consisting of over 11,000 references, but involving only five distinct pages.