

컴퓨터구조 Assignment No.4 - 2019 - 답

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(이것을 인쇄해서 답을 여기에 직접 써서 제출할 것.)

1.

(1) (2점) Cache memory: $2^{(7)}$ Bytes

Main memory: $2^{(11)}$ Bytes

[표 1] 초기 상태 (4점)

	V	Tag	Data
0	1	0100	200 - 207
1	1	0100	208 - 20F
2	0		
3	1	1001	498 - 49F
4	0		
5	1	0100	228 - 22F
6	1	0010	130 - 137
7	0		
8	0		
9	1	1000	448 - 44F
10	1	1000	450 - 457
11	0		
12	0		
13	0		
14	0		
15	1	1000	478 - 47F

[표 3] 최종 상태 (3점)

	V	Tag	Data
0			
1			
2	1	0000	010 - 017
3		1010	518 - 51F
4			
5		0011	1A8 - 1AF
6			
7			
8	1	1000	440 - 447
9			
10			
11			
12			
13			
14			
15			

[표 2] Program (5점)

Instructions	Tag (이진수)	Index (십진수)	H/M
1w \$1,0x478(\$0)	1000	15	H
1w \$2,0x010(\$0)	0000	2	
1w \$3,0x20C(\$0)	0100	1	H
1w \$4,0x454(\$0)	1000	10	H
1w \$5,0x014(\$0)	0000	2	H
1w \$6,0x198(\$0)	0011	3	
1w \$7,0x444(\$0)	1000	8	
1w \$8,0x1A8(\$0)	0011	5	
1w \$9,0x440(\$0)	1000	8	H
1w \$1,0x518(\$0)	1010	3	

2.

(1) (2점) Cache memory: $2^{(9)}$ Bytes

Main memory: $2^{(14)}$ Bytes

[표 4] 초기 상태 (4점)

	V	Tag	Data	V	Tag	Data
0	0			1	001100	0C00 - 0C1F
1	1	010010	1220 - 123F	0		
2	1	001000	0840 - 085F	0		
3	1	010000	1060 - 107F	0		
4	1	010000	1080 - 109F	0		
5	0			1	010000	10A0 - 10BF
6	0			1	010010	12C0 - 12DF
7	0			1	110000	30E0 - 30FF

[표 5] Program (5점)

Instructions	Tag (이진수)	Index (십진수)	H/M
1b \$1,0x3008(\$0)	110000	0	
1b \$2,0x0024(\$0)	000000	1	
1b \$3,0x1088(\$0)	010000	4	H
1b \$4,0x09A0(\$0)	001001	5	
1b \$5,0x3F28(\$0)	111111	1	
1b \$6,0x12D4(\$0)	010010	6	H
1b \$7,0x0C10(\$0)	001100	0	H
1b \$8,0x152C(\$0)	010101	1	
1b \$9,0x1118(\$0)	010001	0	
1b \$1,0x3014(\$0)	110000	0	

[표 6] 최종 상태 (달라진 부분만) (3점)

	V	Tag	Data	V	Tag	Data
0	1	010001	1100 - 111F		110000	3000 - 301F
1		111111	3F20 - 3F3F	1	010101	1520 - 153F
2						
3						
4						
5	1	001001	09A0 - 09BF			
6						
7						