

Homework

9:

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1. a. `addi $a3, zero, 2`  
`addi $t0, zero, 2`  
`addi $t1, zero, 2`  
`addi $t2, zero, 2`  
`addi $t3, zero, 2`  
`addi $t3, zero, 2`  
`addi $t4, zero, 2`  
`addi $t5, zero, 2`  
`addi $t6, zero, 2`  
`addi $t7, zero, 2`  
`addi $s0, zero, 2`  
`addi $s1, zero, 2`  
`addi $s2, zero, 2`  
`addi $s3, zero, 2`  
`addi $s4, zero, 2`  
`addi $s5, zero, 2`  
`addi $s6, zero, 2`  
`addi $s7, zero, 2`  
`addi $t8, zero, 2`

b. Do something with arrays and a loop

Logi SW  
IW

5.2.1

Binary address  $11_2, 10000110_2, 11010100_2, 1_2, 10000111_2, 11010101_2,$   
 $10100010_2, 10100001_2, 10_2, 101100_2, 101001_2, 1101101_2$

Tag:

Binary address  $\gg 24$  bits

Index:

Binary address  $\% 16$

Hit/Miss:

M, M, M, H, M, M, M, M, M, M, M

5.2.2

Binary Address:

$1_2, 10000110_2, 11010100_2, 1_2, 10000111_2, 11010101_2, 10100010_2,$   
 $10100001_2, 10_2, 101100_2, 101001_2, 1101101_2$

Tag:

Binary Address  $\gg 3$  bits

Index:

(Binary address  $\gg 16$  bits)  $\% 8$

Hit/Miss:

M, M, M, H, H, H, M, M, M, M, M

5.2.3 :

- (1) 1 Hz, start time  $5 \times 25 \times 11 + 2 \times 12 = 299$
- (2) 3 Hz, start time  $5 \times 25 \times 9 + 3 \times 12 = 261$
- (3) 2 Hz, start time  $5 \times 25 \times 10 + 4 \times 12 = 298$

5.2.6 :

Yes, but the permission from the 5th bits are lost because at the 8th block.  
So in order to keep that information you must include tag bits to identify  
the address in the cache.