

Example: a sequence of references (word addresses)

	v	tag	data
000	0		
001	1	11	E F G H
010	0		
011	0		
100	1	00	A B C D
101	1	10	X Y Z W
110	0		
111	0		

cache

miss miss miss miss
 01(101) 11 001 10(101) 00 100

00 000	
00 001	
00 010	
00 011	
00 100	A B C D
00 101	
00 110	
00 111	
01 000	
01 001	
01 010	
01 011	
01 100	
01 101	
01 110	
01 111	
10 000	
10 001	
10 010	
10 011	
10 100	
10 101	X Y Z W
10 110	
10 111	
11 000	
11 001	E F G H
11 010	
11 011	
11 100	
11 101	
11 110	
11 111	

memory

1

Example: a sequence of references (word addresses)

	v	tag	data
000	0		
001	1	11	E F G H
010	0		
011	0		
100	1	00	A B C D
101	1	01	K L M N
110	0		
111	0		

cache

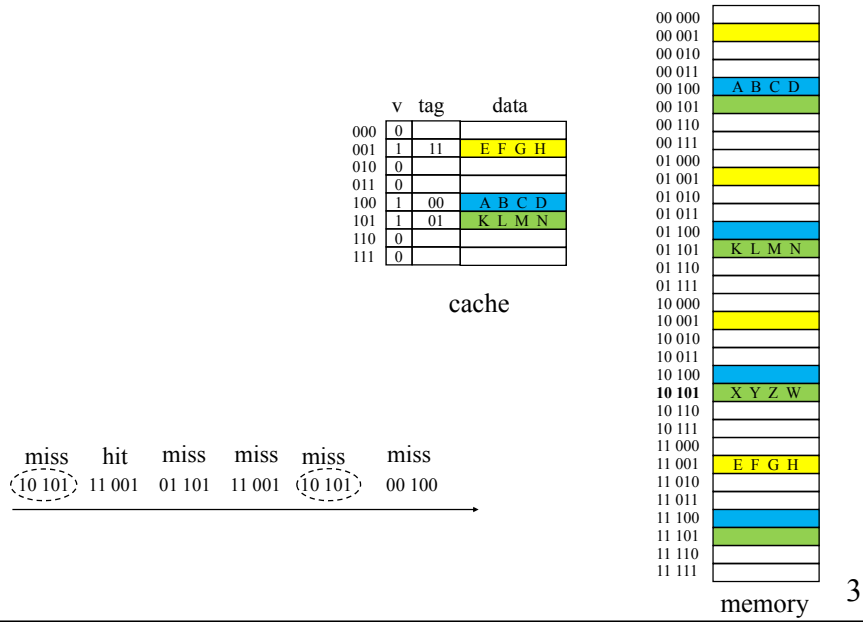
miss miss miss miss
 01 101 11 001 10 101 00 100

00 000	
00 001	
00 010	
00 011	
00 100	A B C D
00 101	
00 110	
00 111	
01 000	
01 001	
01 010	
01 011	
01 100	
01 101	
01 110	
01 111	
10 000	
10 001	
10 010	
10 011	
10 100	
10 101	X Y Z W
10 110	
10 111	
11 000	
11 001	E F G H
11 010	
11 011	
11 100	
11 101	
11 110	
11 111	

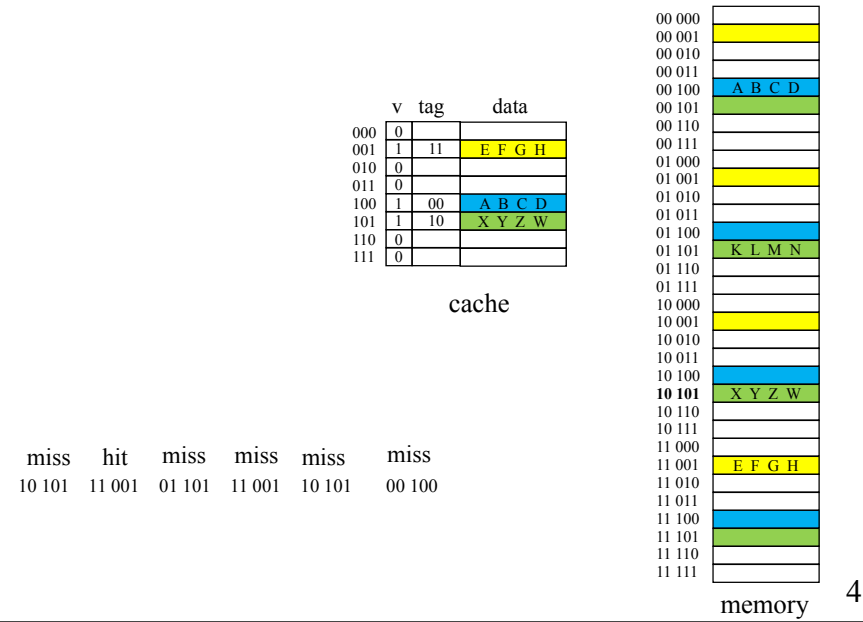
memory

2

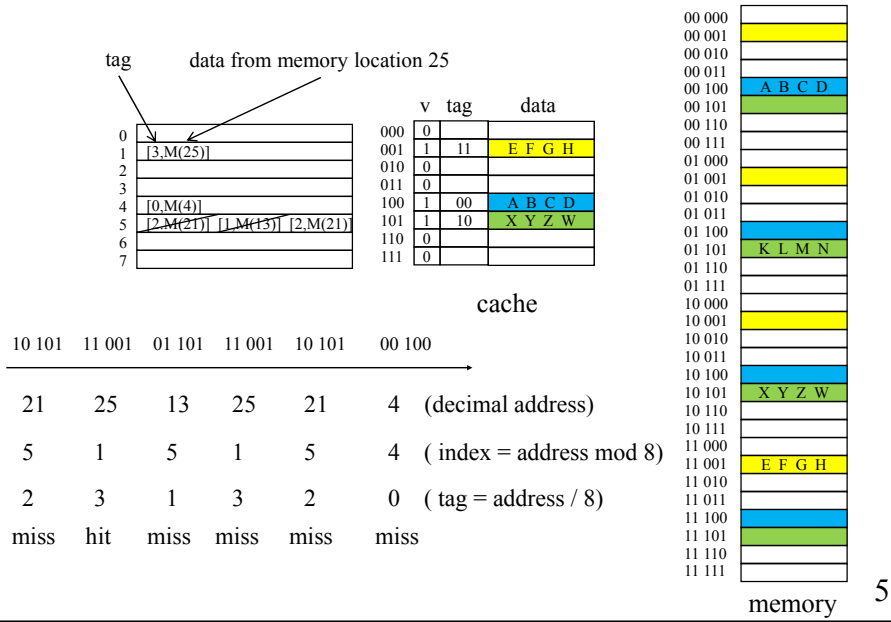
Example: a sequence of references (word addresses)



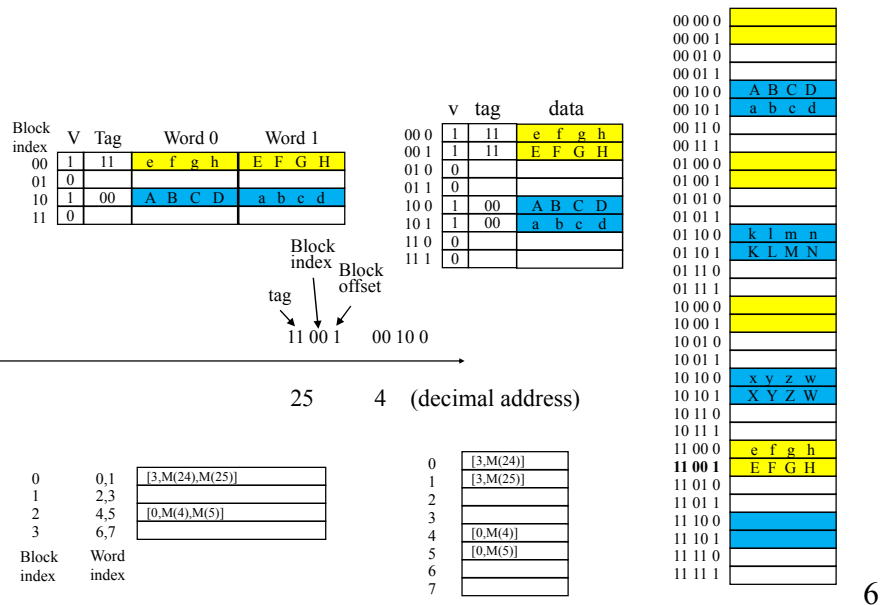
Example: a sequence of references (word addresses)



Example: a sequence of references (word addresses)



Example (block size = 2)



Example (block size = 2)

Block index	V	Tag	Word 0	Word 1
00	1	11	e f g h	E F G H
01	0			
10	1	01	k l m n	K L M N
11	0			

	v	tag	data
000	1	11	e f g h
001	1	11	E F G H
010	0		
011	0		
100	1	01	k l m n
101	1	01	K L M N
110	0		
111	0		

hit

01 10 1 11 00 0 11 00 1 00 10 0

13 24 25 4 (decimal address)

0	0,1	[3,M(24),M(25)]
1	2,3	
2	4,5	[0,M(4),M(5)] [1,M(12),M(13)]
3	6,7	

Block index Word index

0	[3,M(24)]
1	[3,M(24)]
2	
3	
4	[0,M(4)][1,M(12)]
5	[0,M(5)][1,M(13)]
6	
7	

00 00 0	
00 00 1	
00 01 0	
00 01 1	
00 10 0	A B C D
00 10 1	a b c d
00 11 0	
00 11 1	
01 00 0	
01 00 1	
01 01 0	
01 01 1	
01 10 0	k l m n
01 10 1	K L M N
01 11 0	
01 11 1	
10 00 0	
10 00 1	
10 01 0	
10 01 1	
10 10 0	x y z w
10 10 1	X Y Z W
10 11 0	
10 11 1	
11 00 0	e f g h
11 00 1	E F G H
11 01 0	
11 01 1	
11 10 0	
11 10 1	
11 11 0	
11 11 1	