

### 3.1.3 Full associative mapping

$$k = 2^A$$

Set associativity (ways)

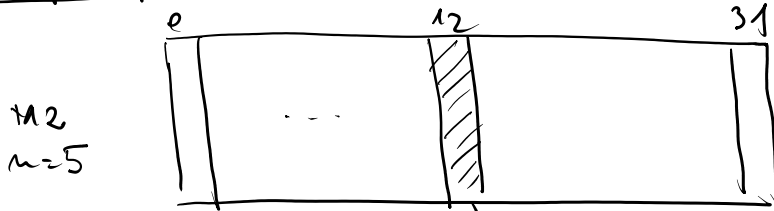
When  $A=0$   $k=1 \Rightarrow$  Direct mapping

When  $A=m \Rightarrow k=2^m$  (the entire cache capacity)

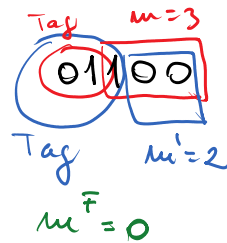
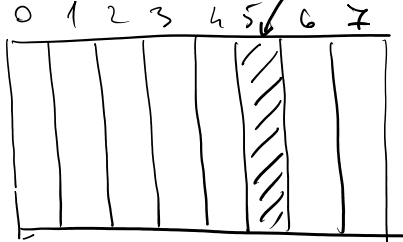
- Used only for small cache capacity

- For large capacity caches  $\rightarrow$  Miss Rate for FA  $\cong$  Miss Rate for SA (SA  $> 8$  or  $16$ )

Example for  $m=3, n=5$

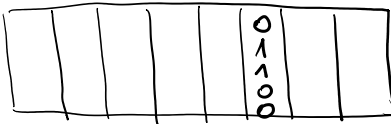


M1  
 $m=3$



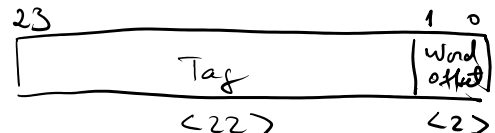
Tag  $\equiv$  Block Number

Tag



### Example 3

Address Word



Address	M2 (MM)	Block No.
0		0
4		1
8		2
...		...
4096		1024
4100	2715	1025
4104		1026
...		...
8192	230	2048
8196		2049
...		...
12292	170	3072
12296		3073
...		...
$2^{24}-4$		$2^{22}-1$

	Tag	Data
	<22>	<32>
0	1 2048	230 ~ ~ ~
1	1 1025	2715 ~ ~ ~
2	1 3073	170 ~ ~ ~
3		
...		
1023		

