Operating Systems

Main Memory: Paging examples

Paging Example

Suppose, in a system, there are two processes - P1 (16 bytes) and P2 (12 bytes) with a page size of 4 bytes. The main memory size of the system is 32 bytes. Page tables of both processes are given below.

p	f
0	5
1	0
2	7
3	2

Page Table of P1

p	f
0	6
1	1
2	4

Page Table of P2

Find the corresponding physical address of the following logical addresses -

i. address 1011 of P1
ii. address 0100 of P1
iii. address 0111 of P2
iv. address 1010 of P2

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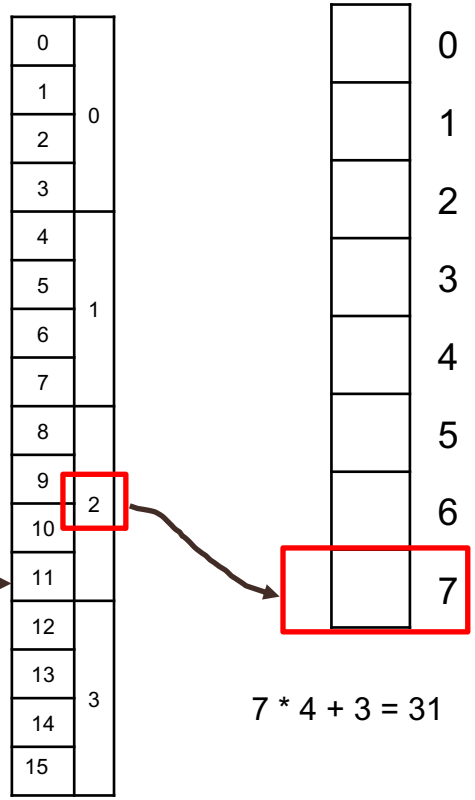
$(1011)_2$ -> $(11)_{10}$



7 * 4 + 3 = 31

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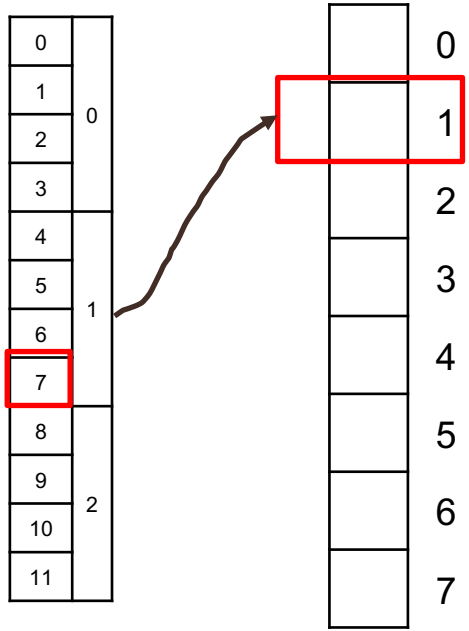

1 * 4 + 3 = 7

Paging Example

Assume that page size = 3KB and Physical Memory = 36KB. If CPU generates logical addresses 5, 9, 2 and 16 respectively then **developed** the users' view of memory which is mapped into physical memory?

P0	CSE101
P1	CSE220
P2	CSE110
P3	CSE330
P4	CSE420
P5	CSE321

Logical Address Space

0	6
1	2
2	9
3	4
4	11
5	7

PMT

Main Memory

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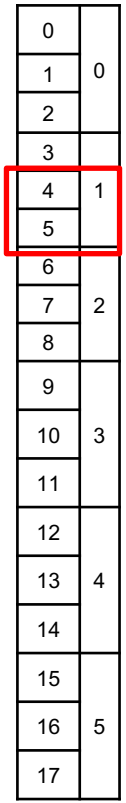
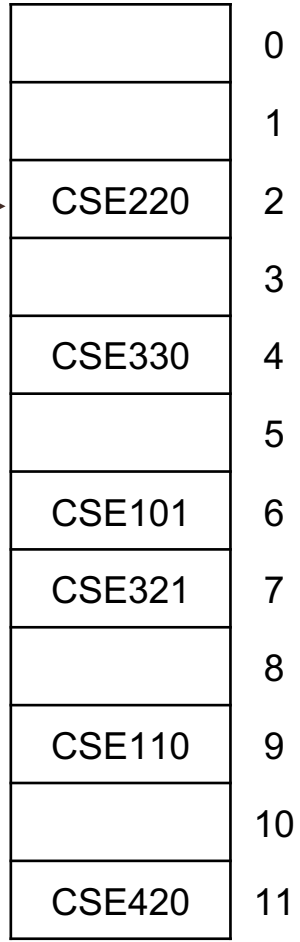
PMT

Main Memory





5 -> 2 * 3 + 2 = 9
16 -> 7 * 3 + 1 = 22