

25/4/22

CM3 Tutorial 1

VIKASH
205001127

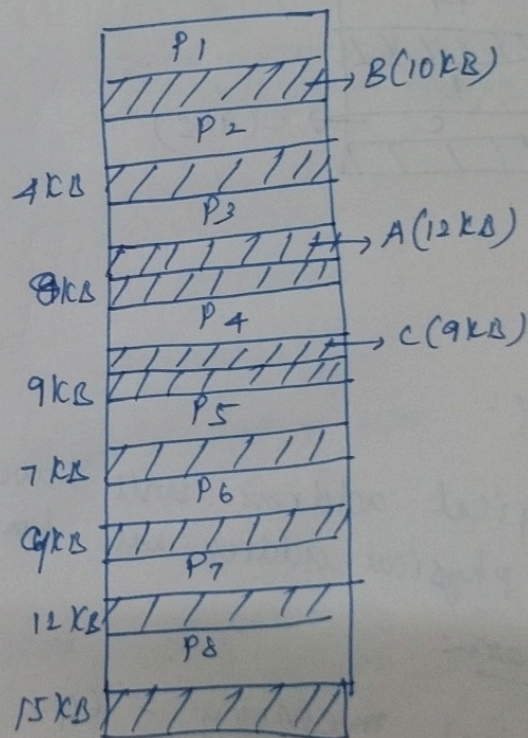
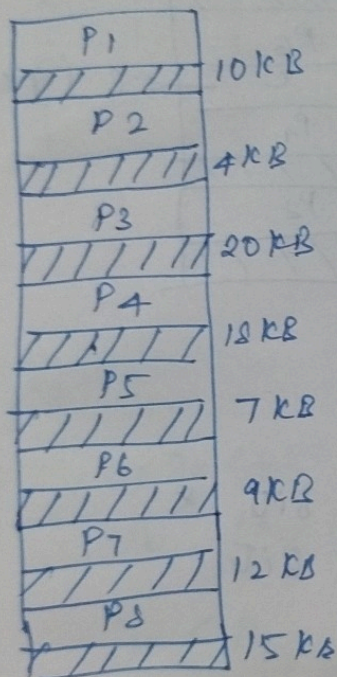
1) Swapping system:

Memory holes: 10KB, 4KB, 20KB, 18KB, 7KB,
9KB, 12KB, 15KB

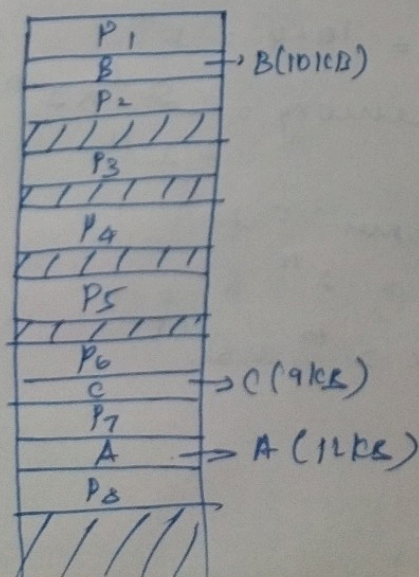
- a) 12KB b) 10KB c) 9KB
 ↳A ↳B ↳C

Before allocation:

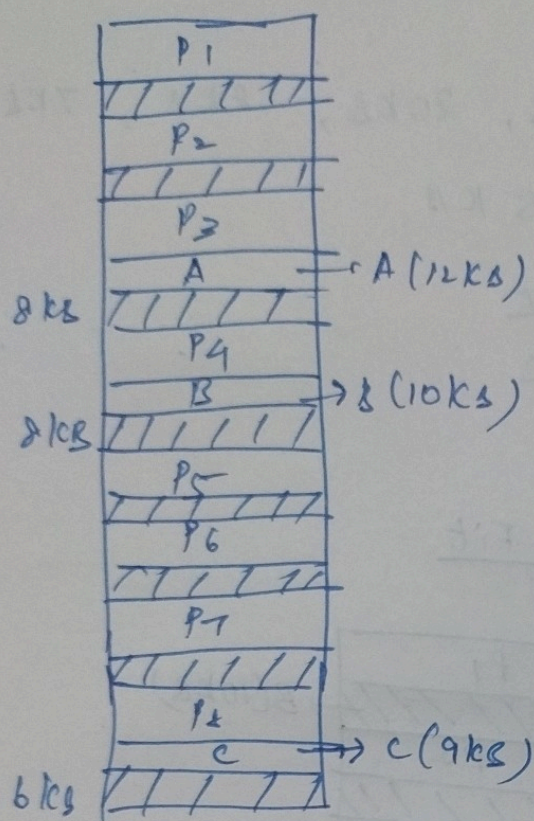
(i) First Fit



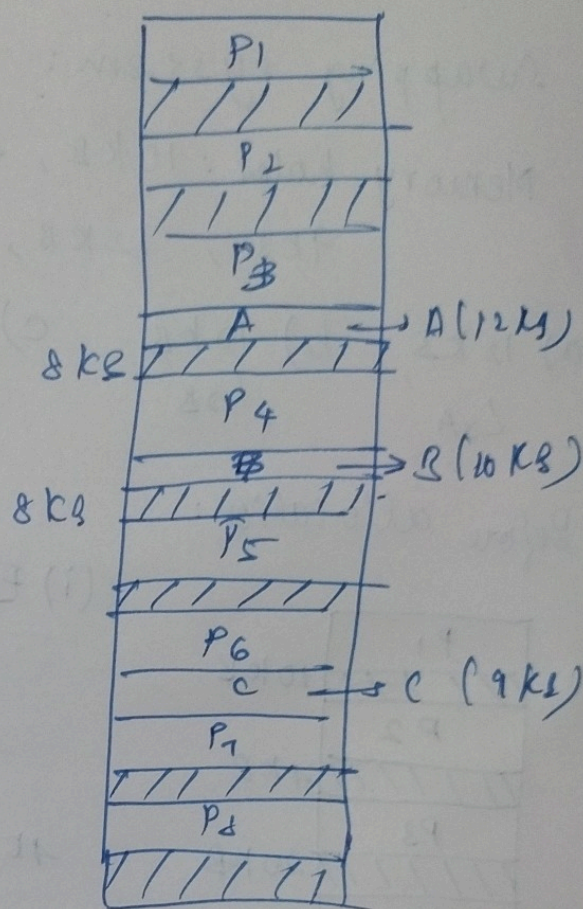
(ii) Best Fit



(iii) Worst Fit



(iv) Next Fit



3) Paging:

Logical address will have 16 bits &
physical address will have 15 bits

Explanation

a) Logical memory = 64 = 2^6 pages
Size of each word = $1024 = 2^{10}$
Total logical memory = $2^6 \times 2^{10} = 2^{16}$

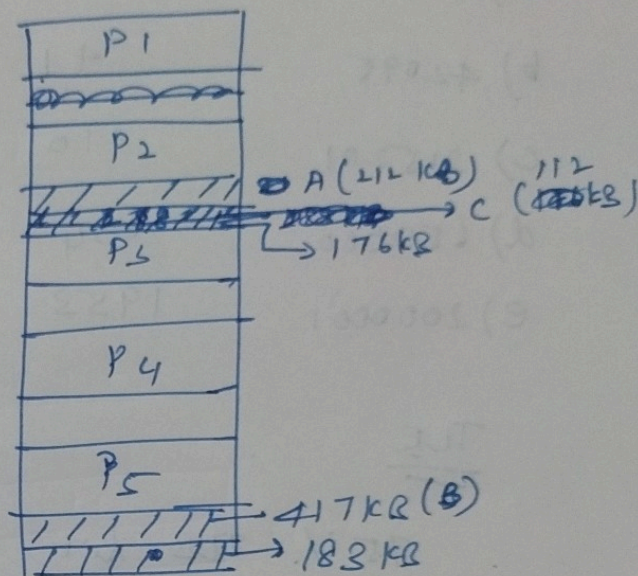
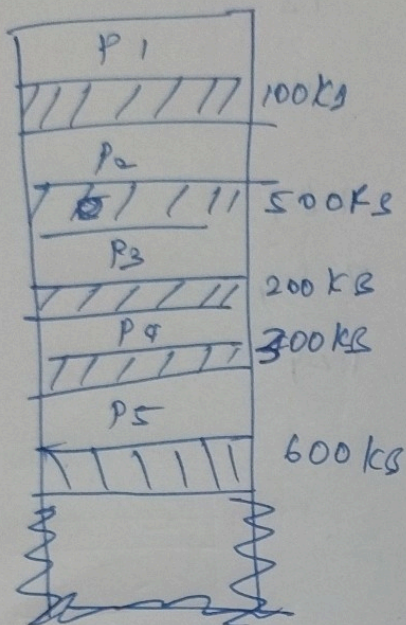
b) Physical memory = 32 frames = 2^5
Size of each word = 2^{10}
Total size = $2^5 \times 2^{10} = 2^{15}$

- 2) 100KB, 500KB, 200KB, 300KB, 600KB
 a) 212KB b) 417KB c) 112KB d) 426KB

B.A

(i) First fit

$$\begin{array}{r} 200 \\ 112 \\ \hline 176 \end{array}$$



4) Segmentation:

a) $480 < 600$
 So Physical address = $219 + 480 = 699$

b) $10 < 14$
 Physical address = $2300 + 10 = 2310$

c) $500 > 100$
 Invalid

d) $400 < 580$
 Physical address = $1327 + 400 = 1727$

e) $112 > 96$
 Invalid.

2) 1KB is 1024 bytes

	Pg No	offset
a) 3085	3	13
b) 42095	41	111
c) 215201	210	161
d) 650000	634	784
e) 2000001	1953	129

TLB

75% TLB hit

$$2 \text{ TLB} = 2 \text{ ns}$$

in access, 50 ns

Effective memory reference

$$\rightarrow (0.75) (2 + 50) + (0.25) (50 + 50 + 2) \\ = 64.5$$

segmentation