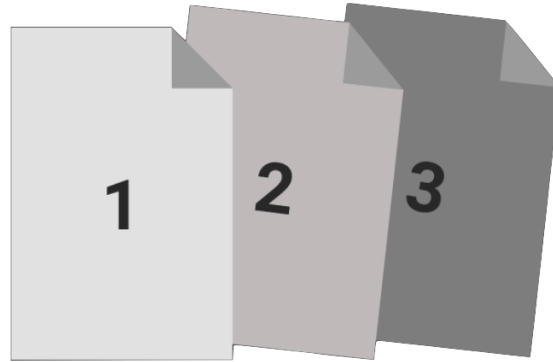
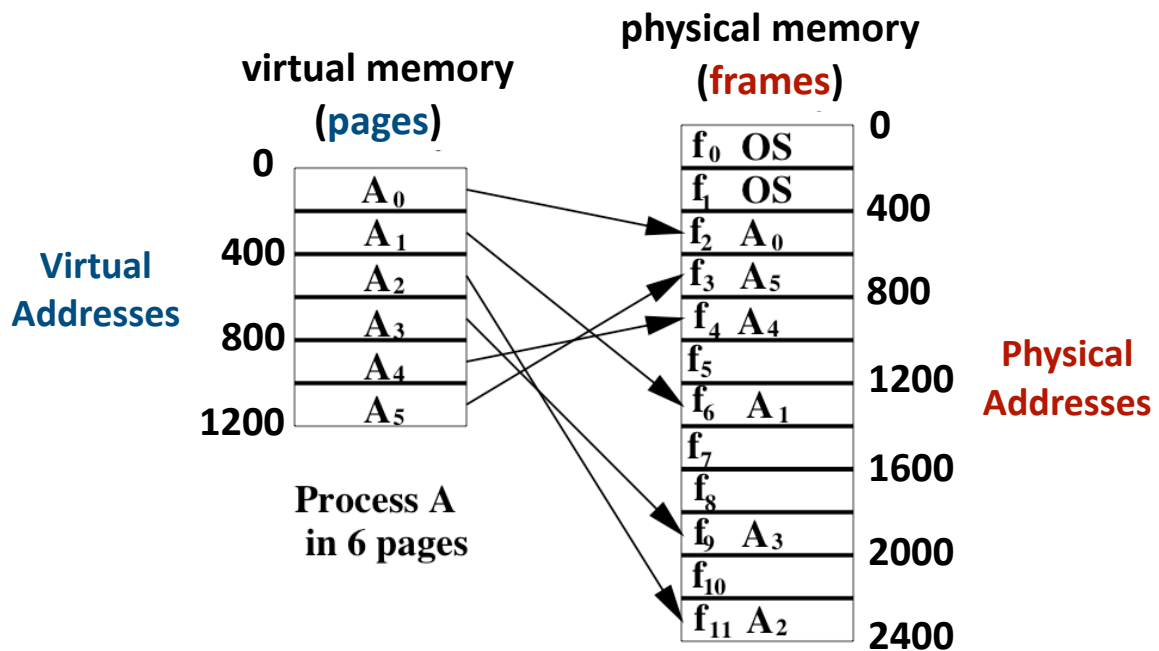


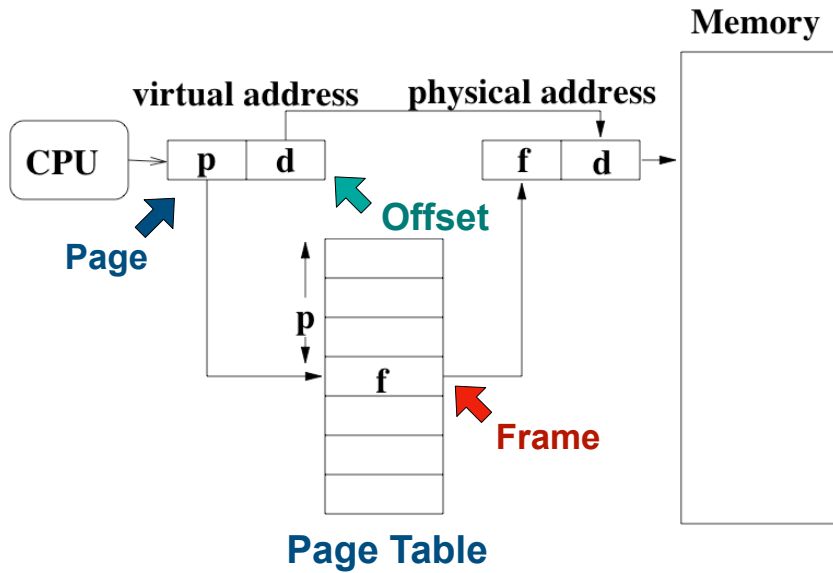
Paging



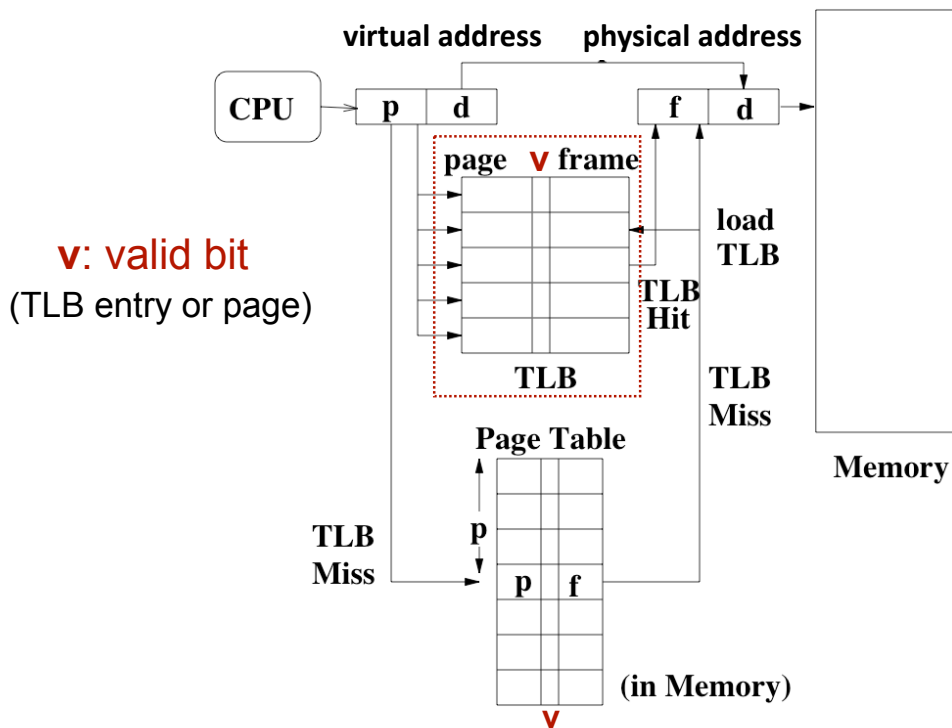
Pages and Frames



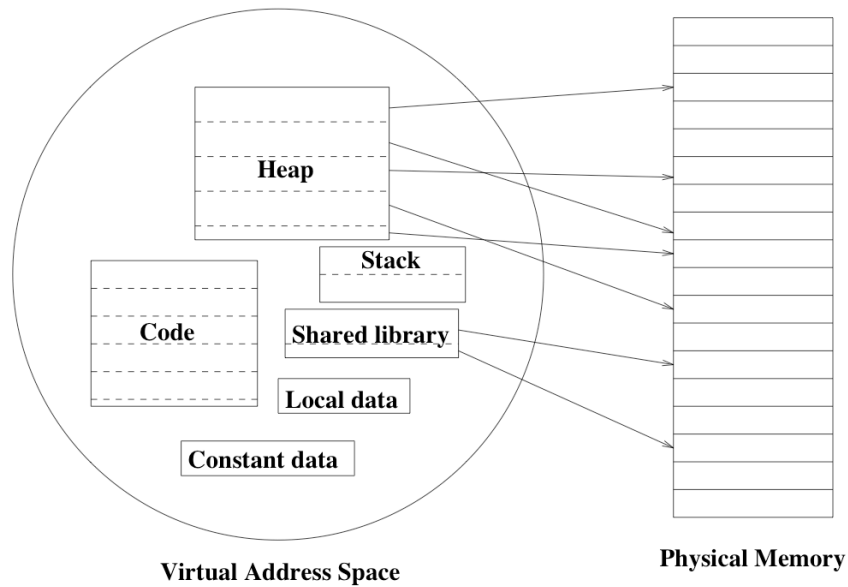
Page Tables and Address Translation



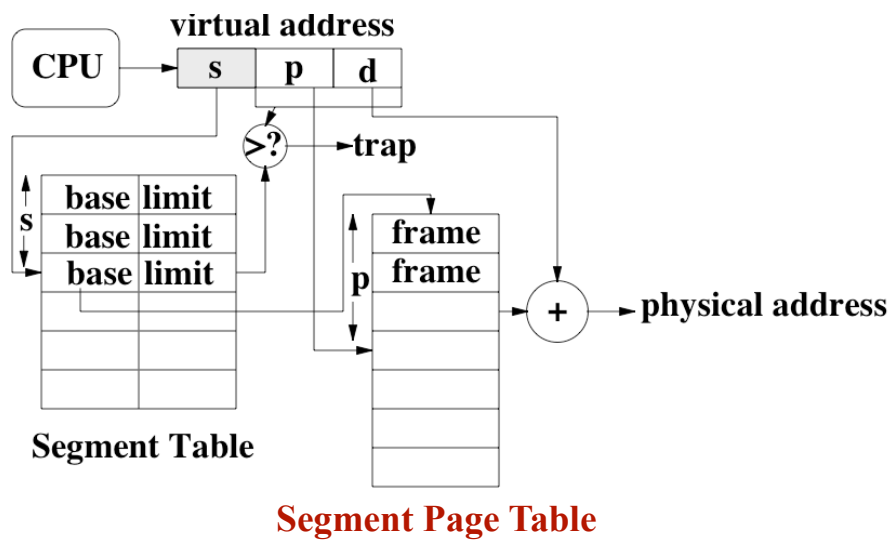
Translation Lookaside Buffer (TLB)



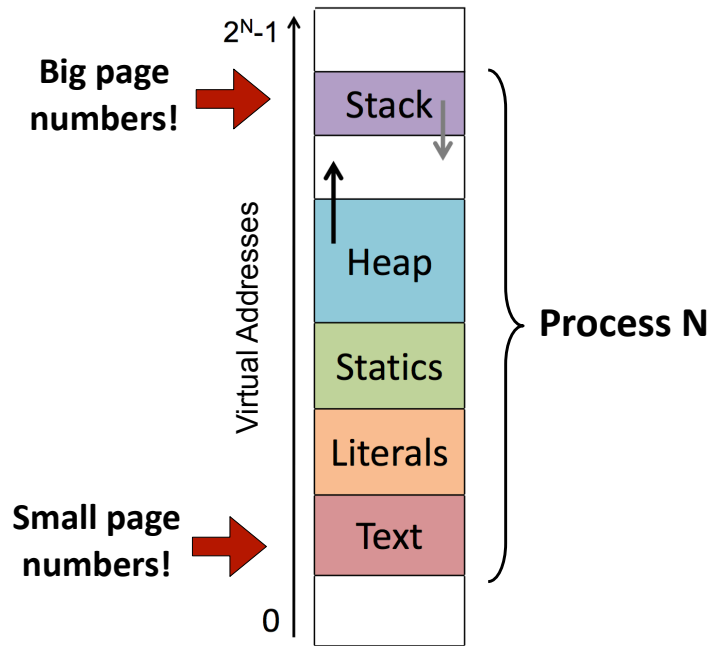
Segmented Paging



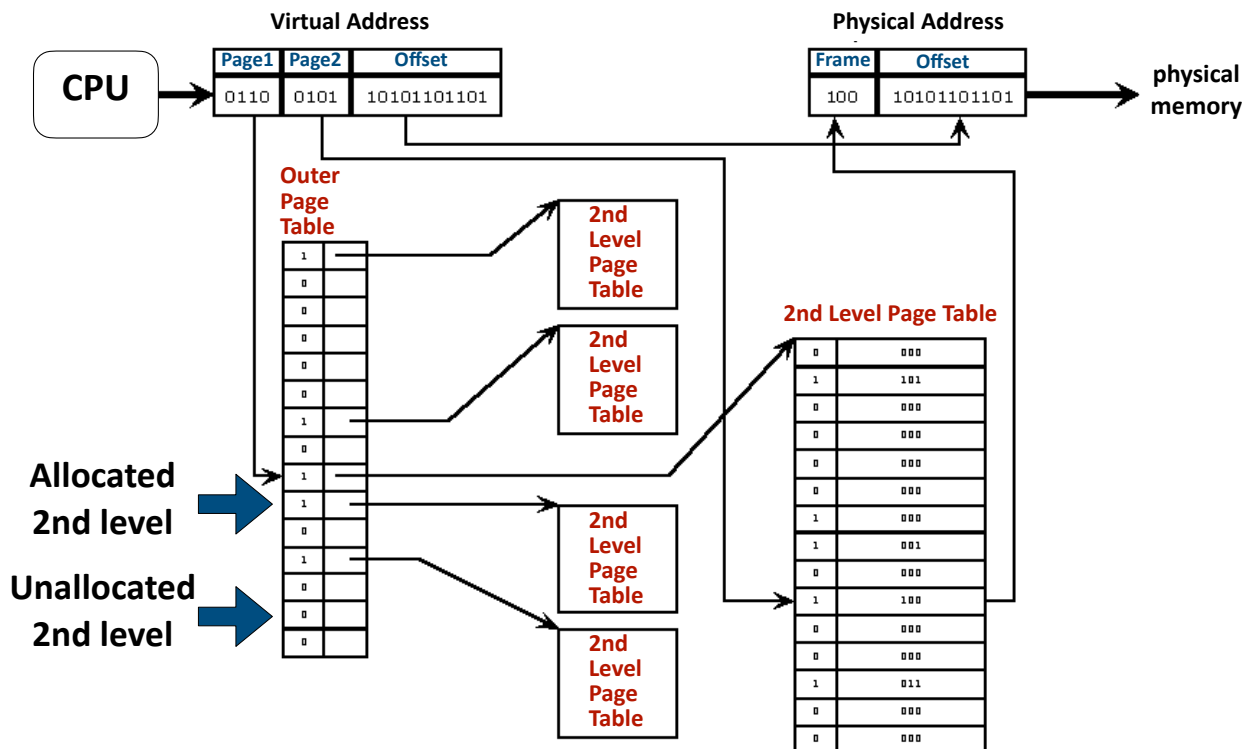
Addressing in Segmented Paging



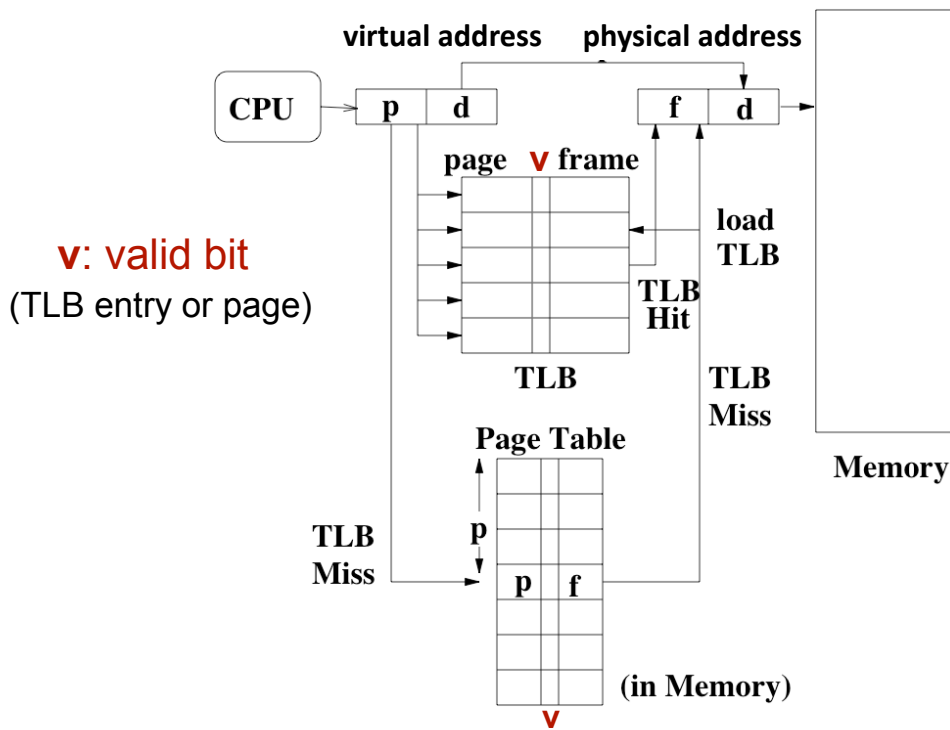
Large Virtual Address Space



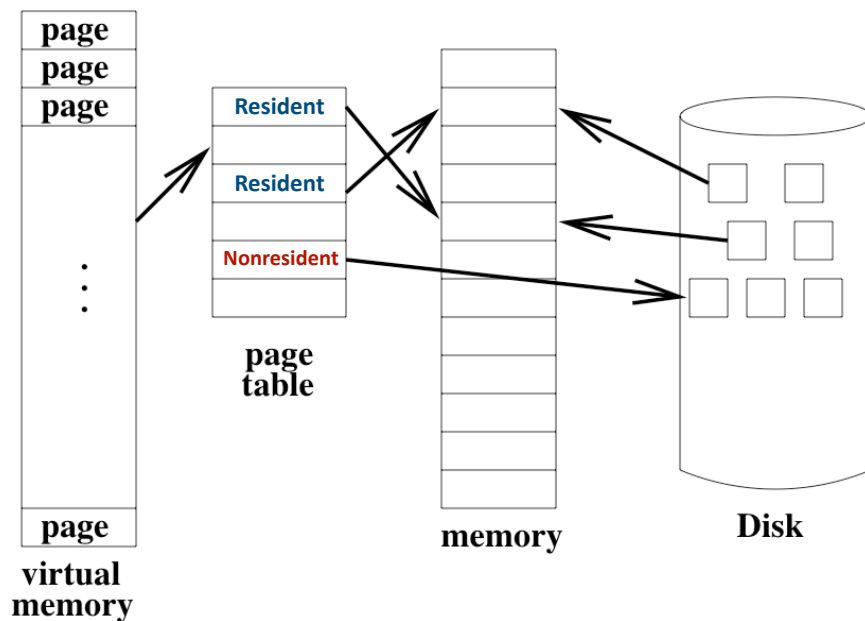
Multilevel Page Tables



Memory Management Unit / MMU (so far)



Demand Paging



Page Replacement: FIFO, MIN, LRU

	A	B	C	A	B	D	A	D	B	C	A
frame 1	A*	A	A	A	A	D*	D	D	D	C*	C
frame 2		B*	B	B	B	B	A*	A	A	A	A
frame 3			C*	C	C	C	C	C	B*	B	B

(FIFO replacement shown)

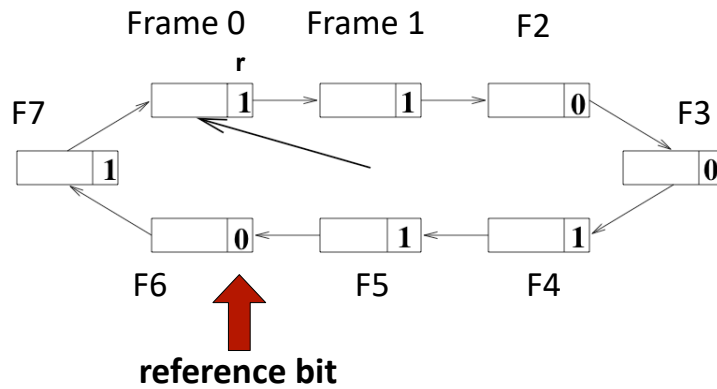
One more example....

A B C D A B E A B C D E

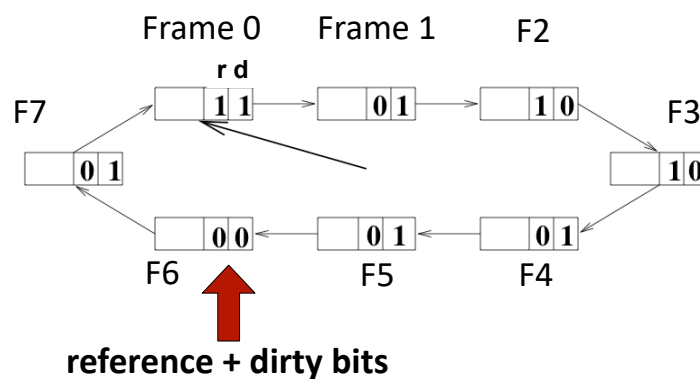
(a) FIFO with 3 frames

(b) FIFO with 4 frames

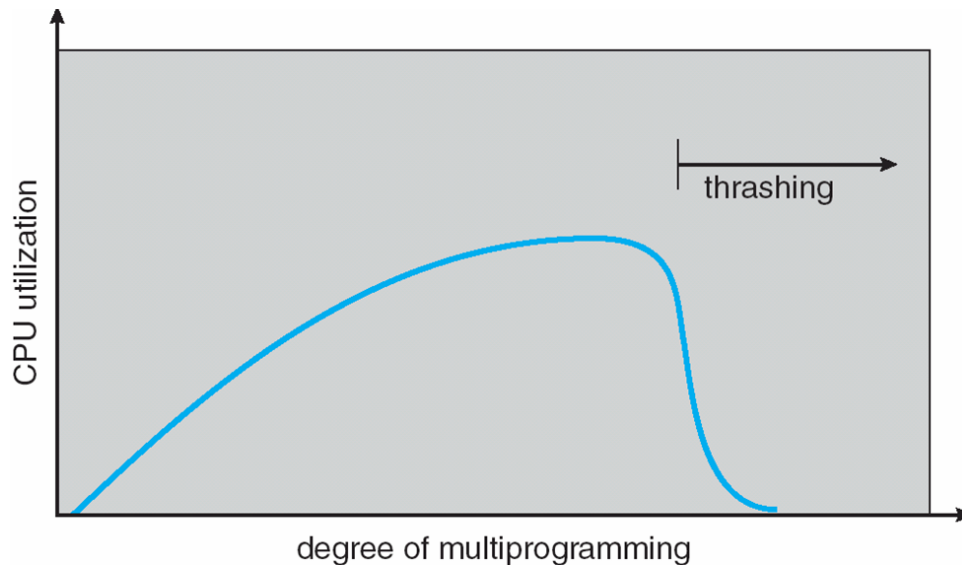
Second Chance / Clock Algorithm



Enhanced Second Chance



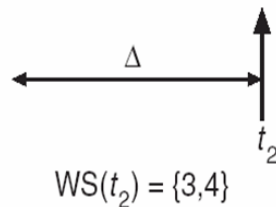
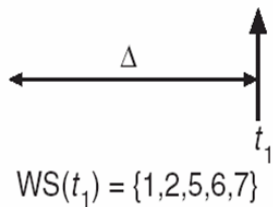
Thrashing



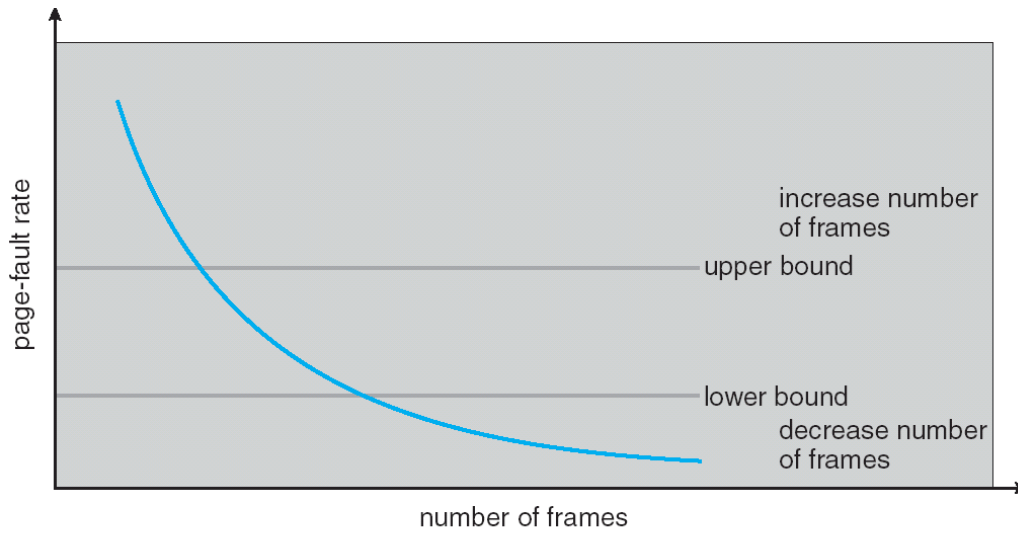
Working Set Model

page reference table

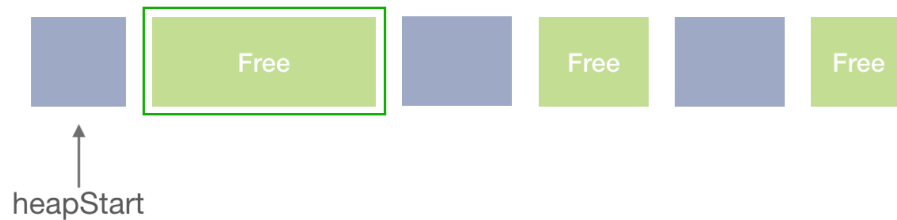
... 2 6 1 5 7 7 7 7 5 1 6 2 3 4 1 2 3 4 4 4 3 4 3 4 4 4 1 3 2 3 4 4 4 3 4 4 4 ...



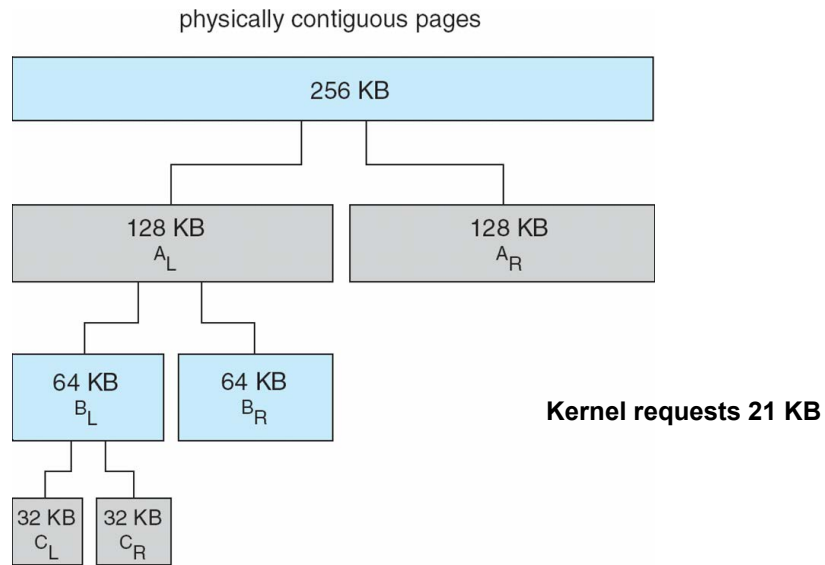
Page Fault Frequency Scheme



Free-Space Management



Buddy Allocation



Slab Allocator (Segregated Lists)

