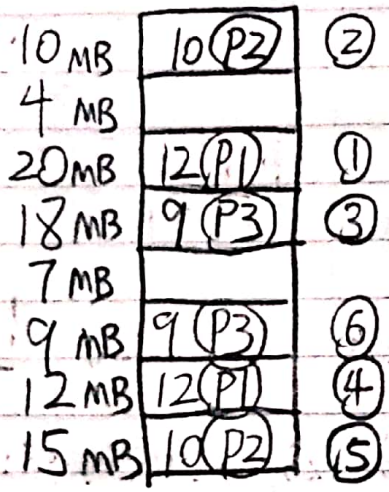
COMP310/ECSE427

Assignment 3

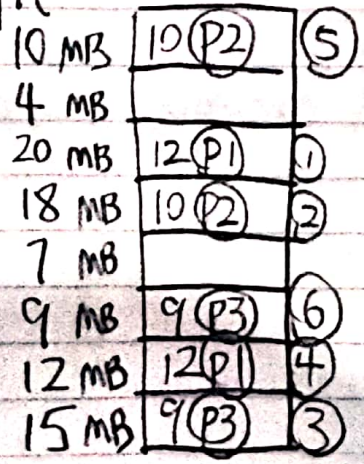
P254 #4 P1 12MB ; P2 10MB ; P3 9MB.

First-fit

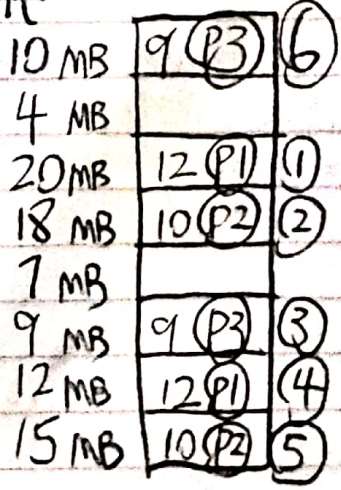


Best-fit

Worst-fit



Next-fit



P254 #7.

a): 20

20 is in virtual page 0k-4K which corresponds to physical memory 8K-12K

Therefore its physical address = 8192 + 20
= 8212

b): 4100

4100 is in page 4K-8K which corresponds to physical memory 4K-8K.

Therefore its physical address = 4096 + (4100 - 4096)
= 4100

C): 8300

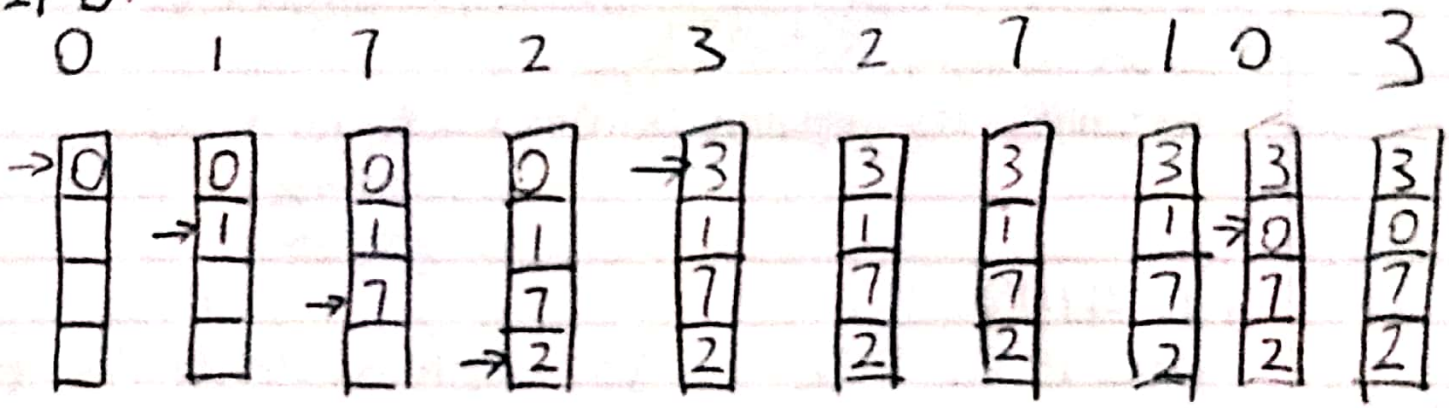
8300 is in page 8K-12K which corresponds to physical memory 24K-28K

Therefore its physical address = 6 × 4096 + (8300 - 4096 × 2)
= 24684

P257 #28

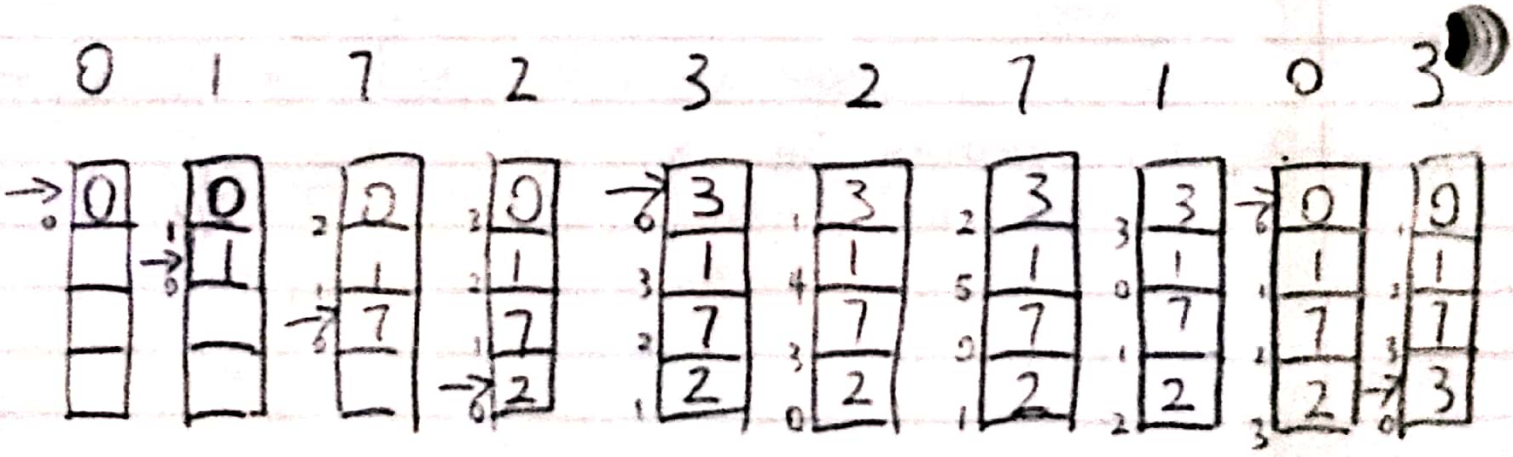
0 1 7 2 3 2 7 1 0 3. 4 frames, 8 pages.

FIFO.



There are total 6 faults.

LRU.



There are 7 faults.

P258 #38

int X[64][64] 4 page frams → 128 words.

We will need $64 \times 64 \div 128 = 32$ pages

Because the X is stored in row-major order, one row of the array occupies half of a frame.

Fragment A.

The inner loop iterates through column order, therefore there will be one page fault for every two inner loop.

Total number of page fault is $64 \times 64 \div 2 = 2048$

Fragment B.

the inner loop iterates through row order.

Therefore there will be one page fault for every two outer loop.

Total number of page fault is $64 - 2 = 32$.

Fragment B will generate the lowest number of page fault.