

SOLUTIONS TO IN-CLASS SMALL GROUP ACTIVITY #6

ANSWERS TO ALL PROBLEMS

ANSWERS FOR PROBLEM 1

1. Load Program A - 3 segments: seg 0 = size 4K, 1=8K, 2=2K

MEMORY MAP FOR SEGMENTATION (AFTER LOADING SEGMENT A)

Start Address	Length	Status	
0K	16K	1	
16K	8K	1	← seg #0
24K	16K	1	
40K	4K	0	← too small
44K	12K	1	
56K	10K	1	← seg #1
66K	12K	1	
78K	10K	1	← seg #2

2. Create Segment Table

Seg #	Starting Address
0	16384
1	57344
2	79872

3. I-Time - Find the absolute address of

1	35
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$$57344 + 35 = 57379$$

ANSWERS FOR PROBLEM 5

1. Load Program A - 14K

PAGE FRAME TABLE (AFTER LOADING PROGRAM A)

PAGE FRAME #	PROGRAM ID	PAGE NUMBER	STATUS
0	Operating Sys	0	1
1	Operating Sys	1	1
2	Operating Sys	2	1
3	Operating Sys	3	1
4	Program X	0	1
5	Program Y	0	1
6	Program A	0	1
7	Program A	1	1
8	Program X	1	1
9	Program A	2	1
10	Program X	2	1
11	Program A	3	1
12	Program Y	1	0
13			0
14			1
15			0

NOTE: Each frame is 4K, so the address of Page Frame #4 would be 16K (4K * Page Frame #)

2. Page Table for Program A

Page #	Starting Address
0	24576 (6*4096)
1	28672
2	36864
3	45056

3. I-Time - Find the absolute address of

1	35
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page# disp.

$$28672 + 35 = 28707$$

ANSWERS FOR PROBLEM 9

1. Load Program A - 3 segments: seg 0 = size 4K, 1=8K, 2=2K

PAGE FRAME TABLE FOR SEGMENTATION & PAGING (AFTER LOADING PROGRAM A)

PAGE FRAME #	PROGRAM ID	SEGMENT NUMBER	PAGE NUMBER	STATUS
0	Operating Sys	0	0	1
1	Operating Sys	0	1	1
2	Operating Sys	1	0	1
3	Operating Sys	1	1	1
4	Program X	0	0	1
5	Program Y	0	0	1
6	Program A	0	0	1
7	Program A	1	0	1
8	Program X	0	1	1
9	Program X	1	0	1
10	Program X	1	1	1
11	Program A	1	1	1
12	Program A	2	0	1
13				0
14	Program Y	1	0	1
15				0
16	Program Y	1	1	1
17	Program X	2	0	1
18				0
19				0

NOTE: Each frame is 4K, so the address of Page Frame #4 would be 16K (4K * Page Frame #)

2. Page Table for Seg #1 only

Page #	Starting Address
0	28672 (7*4096)
1	45056

3. I-Time - Find the absolute address of

1	1	35
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seg# page# disp.

$$45056 + 35 = 45091$$